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(*Second Edition.*)

Moral Education: Its Laws and Methods.

By Dr. J. R. BUCHANAN, President of the American University, Boston.

The following are a few of the spontaneous commendations of this work immediately following its publication:

"This is an important work on a most important subject. The importance of the book is indicated by the very significant fact that Mrs. Elizabeth Thompson, the noted philanthropist of New York, has purchased half the edition for gratuitous distribution. Dr. Buchanan has set before himself the Herculean task of revolutionizing our entire system of education. . . . . We have thus briefly indicated what are the contents of this book. These points are enforced with unflagging energy, with great originality, and with elaborate but always pertinent illustration. We commend Dr. Buchanan's book to our readers, and wish him success in the great work he has undertaken."—*Boston Commonwealth.*

"Clear, fresh, and forcible in every page, there has appeared no work like it, none which can compare with it in practical suggestiveness. After reading it we feel that the salvation of the coming generations depends on the inauguration of a new method of teaching, whereby the mind and body in completeness shall be perfected, instead of the latter being exhausted and broken down, while the former is stuffed with useless rubbish. Especially do we recommend the book to the perusal of parents having children to educate, and to young men and women who are about entering an educational course."—H. T. in *Religio-Philosophical Journal.*

"Great as have been the improvements made in educational matters during the past quarter of a century, they are small and inadequate compared to the system proposed by Dr. Buchanan. . . . . This book contains so much that is worth the attention of the thinking and reading public that we shall be unable to give an adequate idea of it in newspaper quotations. . . . . We cannot close this notice without calling attention to the chapter on ventilation at the close of the volume. If all buildings, public and private, had such a system of ventilation, there would be less malaria and sickness."—*Hartford Times.*

"The high opinion we have heretofore expressed of this profoundly original and instructive work is more than sustained by the judgment of the best and most liberal writers."—*Banner of Light.*

"It expresses the wish which every lover of the human race must second, that this volume, with its high faith and noble enthusiasm for the good, the beautiful and the true, may have the widest circulation and awaken a most effective response."—*Home Journal*, of New York.

"A copy of it should be in every household and on every teacher's desk. The twelfth chapter relates to 'Ventilation and Health,' and contains matter of such vital importance that, were it all the book contained, it would more than compensate the reader for any outlay of time or money he may have made upon it—a needed book, whose teachings would lift humanity out of darkness into light."—*Newmarket Advertiser.*

"The originality of this work is remarkable. It is one of those works which, like Bacon's 'Novum Organum' or Hahnemann's 'Organon,' compels us, if we accept it, to make a new departure from old methods and principles."—*Health Monthly.*

"The author displays learning and deep study of every branch of morals, and presents his knowledge in a convincing manner. The book is moreover extremely interesting even to the ignorant or superficial reader. The author proposes a broad and original plan of education, chiefly through the moral faculties, and his system as expounded in this work is sure of sympathy and followers among the true-hearted and intelligent."—*Boston Globe.*

"It is pronounced extremely interesting by those who have seen it. It contains very much of importance to our time."—*New York Truth-Seeker.*

Rev. WILLIAM BRADLEY, of Boston, says:

"The chapter on ventilation alone makes your book invaluable. No language can sufficiently commend it. Every family, all architects, builders, school committees, proprietors of halls, theatres, churches, school-houses, colleges and hospitals should have it. These are not the words of an enthusiastic convert, for your plan is based on rational principles, some of which I have studied, and to some extent understood and applied in the ventilation of my residence and

in the church which we have just finished, and in which I officiate, but not so perfectly as we could and would have done had we had your book in time."

A. E. NEWTON, of Philadelphia, a philosophic writer on education, says:

"You have outlined, in a most thorough and comprehensive way, the education of the future, to which all right-minded men, all lovers of their race, must begin to turn their earnest attention. Your work ought to introduce a new era in educational aims and methods, not only in our own country, but throughout the world. . . . . I speak with the more positiveness and earnestness from the fact that I have for years given these subjects much thought and study, and have been led substantially in the same directions, in almost every particular, as yourself. . . . . I congratulate you on the grandeur and completeness of the educational scheme you have set forth."

Mrs. N. C. M., a lady of rare intellectual gifts, says:

"One of the chief characteristics of this book that pleases me is that you have shown that happy faculty possessed by so few of our learned men and writers—the ability to so present your best thoughts that all classes may read with understanding, and grasp your meaning. This proves to me that you are a chosen instrument for a great and good work."

Rev. B. F. BARRETT, one of the most eminent writers of his church, says:

"We are perfectly *charmed* with your book. I regard it as by far the most valuable work on education ever published. You have herein formulated the very wisdom of heaven on the highest and most momentous of all themes. Your work is destined, in my judgment, to inaugurate a new era in popular education. It contains more and higher wisdom on the subject of which it treats *than all the other books ever written on education.*"

Rev. Dr. W. P. STRICKLAND says:

"The book is a desideratum long wanted, and it seems to me every Christian and every man who has a shade of philanthropy ought not only to bid it God-speed, but to pray and labor and *give* to plant these truths in the minds and hearts of the community. God bless the author! His great work will live when all bigoted opposers are forgotten."

DR. CLARK.—"This is certainly the ablest work and the most original that has ever been published on the subject of education. Every teacher will find in this work the grandest ideal of his profession."—Dr. B. F. CLARK, President Educational Aid Union.

GEN. BULLARD.—"I have read Prof. Buchanan's new book with great pleasure and profit. Its criticism of existing institutions is so radical that it is fortunate that the book has the authority of his great experience, varied learning and high character. It will do a great work towards emancipating the race from error and superstition and developing a higher humanity."—Gen. E. F. BULLARD.

"A mine of wealth, rich in illustration, cogent in reasoning, and well buttressed by authority. The natural effect resulting from a perusal of it is to produce a longing desire in the mind of the thoughtful and benevolent reader that it might be carefully and appreciatively read by every man, woman and youth in the land."—J. G. J. in *R. P. Journal.*

W. K. HOYT.—"No such work has ever been published upon the subject of education. Locke, Milton, Mill, Fellenberg, Pestalozzi, and Froebel had glimpses of an educational system similar to that now presented, but no one has ever grasped the whole, nor has any one ever realized the psychological principle developed by Prof. Buchanan that intellectual education uses the eye, while character education uses the ear."—Wm. K. HOYT.

"Indeed, I regard it as the greatest work (the importance of the subject being duly considered) ever written by an American author, and it is destined, I believe, to effect an entire revolution in our whole educational system."—Rev. B. F. BARRETT.

Pages might be filled with similar testimonials from enlightened teachers and friends of progress, who have received this volume with enthusiasm, the first edition being sold in three months. Being published by the author, copies may be obtained by addressing Dr. J. R. Buchanan, Boston, remitting the price, $1.50, by postal order or registered letter. It may also be obtained by addressing Colby & Rich, Boston. Local agents for the sale of the book will apply to Dr. Buchanan for terms.

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"Seek ye the kingdom of God, and all these things shall be added unto you."—LUKE XII.: 31.

MORAL EDUCATION:

ITS LAWS AND METHODS.

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GOVERNMENTS, CHURCHES AND COLLEGES FOR MANY THOUSAND YEARS HAVE STRIVEN IN VAIN TO CONQUER CRIME, DISEASE, AND MISERY—A NEW METHOD MUST THEREFORE BE ADOPTED—IF THAT METHOD CAN BE FOUND IN THIS VOLUME, DOES IT NOT INDICATE A BETTER FUTURE FOR HUMANITY?

BY

JOSEPH RODES BUCHANAN, M.D.,

PRESIDENT OF THE AMERICAN UNIVERSITY (BOSTON).

Author of "System of Anthropology," Editor of Buchanan's Journal of Man and Professor of Physiology and Institutes of Medicine in four Medical Colleges, successively from 1846 to 1881; Discoverer of Cerebal Impressibility, and of the Sciences of Psychometry and Sarcognomy.

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TO THE READER.

For more than a third of a century the doctrines illustrated in this volume have been cherished by the author, when there were few to sympathize with him. To-day there are thousands by whom many of these ideas are cherished, who are ready to welcome their expression, and whose enthusiastic approbation justifies the hope that these great truths may ere long pervade the educational system of the English-speaking race, and extend their beneficent power not only among European races, but among the Oriental nations, who are rousing from the torpor of ages. May I not hope that every philanthropist who realizes the importance of the principles here presented will aid in their diffusion by circulating this volume?

The Author.

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INTRODUCTION.

THE signal failure of educational systems to elevate the social condition of mankind, and the development of the higher intelligence and wiser philanthropy which demand something better, make the present eminently the proper time for a fundamental change.

A system of education substantially identical in its spirit and aim with those which prevailed over twenty centuries ago in Greece and Rome (being merely a limited intellectual culture) is very far behind the demands of modern philanthropy and intelligence. It belongs to the intellectual condition of that old period which college students are still taught to venerate, when Nature was supposed to consist of the four elements, earth, air, fire and water; when the magnitude and rotundity of the earth were unknown; when the stellar universe was considered a mysterious accompaniment of the flat earth; when the climates, oceans and continents of earth were still unexplored, the vegetable and animal kingdoms almost unknown and the structure of the globe totally unknown; when the structure and functions of the human body were mysteries, and the attributes of soul and body being alike an inaccessible mystery, their culture and development were necessarily either neglected or blindly and aimlessly undertaken. In such a condition the school could do nothing but cultivate language, oratory, history and speculation.

The immense progress of modern society beyond the ignorance of the ancients has been a progress in

everything but that which specially concerns education, and education therefore stagnates with its basic sciences. In all that concerns man except the structure and physical operations of his body, the modern university is but little in advance of the Athenian Lyceum. Its pneumatology and psychology, if it can by courtesy be said to have such sciences, are little else than speculation, and as to the conjoint action of soul and body, and the laws of their interrelation, the modern college professor knows about as little as the Greek speculator; indeed there are many who know less, having been educated into doubt or denial of the existence of the soul. This absolute stagnation of psychic science and anthropology in the universities has necessarily carried with it a similar stagnation in the science of development or education, for development must be based upon, or guided by, the knowledge of the thing to be developed.

A satisfactory knowledge of the psychic and physiological functions of life and their definite association with the brain and body and laws of interaction would necessarily indicate the laws of their development. That development is education, and the system of education which I present has its scientific basis in the anthropology which I have been teaching for forty years, and its empirical basis in the successful operations of schools in which correct principles and methods have been adopted.

In presenting by this volume the convictions which I have cherished for nearly half a century, I find that I am no longer a solitary voice in the wilderness, and that the most liberal thinkers of the present generation are prepared to hail with cordiality the principles of a "full-orbed education," which, when I presented them at Minneapolis before the National Educational Association, were received with much approbation.

During the preparation of this volume I have received so many indubitable evidences of appreciation, sympathy and co-operation as to induce me to propose the establishment of the Pantological University at Boston, as an embodiment of the new education, and

to deliver an address upon the subject at Boston, June 18, 1882.

To this address* (a concise statement of the principles of the new education) and the purposes which it unfolds, attention has been called by a few of my friends in the following appeal to progressive minds. The great intelligence, learning and ability of those whose names are signed, and who have long been familiar with the most advanced forms of modern thought, are sufficient to arrest the attention of the most conservative, or even the most pessimistic thinkers.

To the Friends of Progress.

In the eloquent and memorable address delivered by Prof. J. R. Buchanan, at Boston, on the "New Era in Education," we find a scheme of philanthropy more comprehensive, wide-reaching and efficient than any of which we have any knowledge. We ask you to read it carefully, that each one may answer for himself the question, What can I do to promote so grand a measure?

If the principles for which heroes, saints and martyrs have died, and will continue to toil and suffer, are to become established on earth, it must be by such means, for falsehood and wrong can never cease to prevail until they are expelled by what Prof. Buchanan calls the omnipotent power of education. That power and the mode of realizing it have been presented by him as they have never before been presented. He is the leader in this great reform, and it is fitting that he should be, since his life has been given disinterestedly to reform, and his wonderful discoveries have organized with philosophic clearness the great science of man—the science of anthropology—from which philosophy will take a new departure, and the results of which in the words of the poet Bryant are, "Second to no other in immediate interest and in promise of important future results to science and humanity." No one individual in the whole history of vital and medical science has done so much to solve the mysteries of being and apply the solution to human welfare.

Among the grand results arising are an entire change of our educational system and a fundamental change in medical philosophy and practice, the merit of which is already recognized by those who have attended his original courses of instruction.

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* I know of no better method of diffusing a knowledge of the proposed educational reform than the circulation of the Boston address, a pamphlet of twelve pages, which I shall furnish gratuitously to all applicants, or in quantities at the rate of $2 per hundred.

In this great movement we shall co-operate as friends, and we do not see how any one who understands the subject and feels a sentiment of love for his fellow-beings can hesitate to co-operate by personal exertion, and by all the means that he can control, for works of benevolence and enlightenment.

NELSON CROSS,	WM. P. STRICKLAND, D.D.
J. L. O'SULLIVAN,	J. M. PEEBLES, M.D.
S. B. BRITTAN,	H. P. GATCHELL, M.D.
HENRY KIDDLE,	WM. H. ATKINSON, M.D.
ALLEN PUTNAM,	F. L. H. WILLIS, M.D.
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R. P. WILSON,	M. B. HAYDEN, M.D.
L. L. WHITLOCK,	K. B. MARTIN, M.D.
E. L. SAXON,	D. HIGBIE, M.D.
SAMUEL T. THOMPSON,	B. FRANKLIN CLARK, M.D.
S. B. NICHOLS, and others.	

I heartily approve the grand Educational Reform proposed by Dr. Buchanan, *and shall be glad to co-operate in its furtherance in all ways in my power.*

A. E. NEWTON, *Arlington, Mass.*

MORAL EDUCATION.

CHAPTER I.

THE ESSENTIAL ELEMENTS OF A LIBERAL EDUCATION.*

Ancient ignorance.—A glacial period of twenty centuries not yet ended.—Illiberal education.—Its signal defects.—Schooling not education.—The five indispensable elements of liberal education.—1st. Physiological development antagonized by schools.—2d. Industrial education—its absence demoralizing and degenerating. — 3d. Medical education — we have no right to be sick and should understand the preservation of health.—4th. Life not worth living without moral development — virtue should be the first object of education.—5th. The literary or intellectual, the least important of the five.—Omnipotence of the school.—Results of liberal and illiberal education contrasted.—Illiberal education responsible for the world's misery.—Mill's ideal of education.—The moral the only elevating power.—Criticism of Italian universities.—Criticism of German universities.—Degradation of education by the exclusion of its ethical elements.—Indifference to collegiate education.—Colleges not self-sustained.—A liberal education should be attractive and accessible to all.

FOR about two thousand years the progress of science and philosophy was virtually arrested by a superstitious reverence for Greek literature. The dense ignorance of the age of Plato and Aristotle was crystallized into forms of thought which, like a vast iceberg, covered the civilized world, until in the time of Galileo it began to thaw in the divine light of science.

* An address delivered in the University Convocation of the State of New York, at Albany, July 10th, 1878, with subsequent additions.

It is commonly supposed that this glacial period of fully twenty centuries has passed away entirely—that the ice is all dissolved, and that the light of divine love and wisdom, falling upon the soil with unobstructed warmth, is bringing forth the dense and rapid growth that insures a magnificent harvest; or, in plainer language, that we are fully emancipated from the influence of ancient ignorance, and are proceeding in the most direct and rational manner to cultivate and develop human intelligence, and to apply that intelligence to the acquisition of all attainable knowledge.

Disclaiming all intemperate radicalism and all needless iconoclasm, I am nevertheless compelled by a conception of truth derived from new and peculiar investigations, and also verified by experience in education, to maintain the opposite opinion—to declare that the iceberg is not yet entirely melted, but still exists as a benumbing power; for although Aristotle has been annihilated as authority by Galileo, Newton, and the physiologists, the barbarian conceptions of education and of philosophy which come down from the Aristotelian age are still dominant in various degrees over the leading universities of the world—to so great an extent, indeed, that we shall not be able to boast of a true system of liberal education until the entire philosophy, ethics, teaching, and practice of our leading institutions of Europe and America shall be thoroughly revolutionized, their leading conceptions being not only fundamentally changed, but absolutely reversed. If you will pardon the audacity of this language, I will endeavor to show that it is not extravagant. There seems to be nothing in existence at present on a large scale in the leading institutions which can be properly called a *liberal education*, for that which makes the most imposing claims to be recognized as liberal education in the universities appears, when viewed from the standpoint of anthropology, not only lame, feeble, and defective in the *most essential* elements of a liberal education, but positively *illiberal* in its contractile influence upon the intellect

and soul, as well as its degenerative influence upon the body.

The science of man demands a revolution in education, but the narrow limits of a paper before this convocation do not admit an exposition of this demand, or its basis—nor do they admit a distinct criticism of education as it is, nor a distinct exposition of education *as it should be.* The fullest development our time admits of the philosophy of education will be but offering the synoptic head-lines of a chapter that is not yet written. I desire that these remarks may be accepted, not as a statement of the case, but as an index referring to the statement that may be made hereafter.

In presenting such a paper I place myself at your mercy, without a shield against misconception, and attribute to you the candor, patience, courtesy, liberality and intuitive recognition of truth when nakedly presented, which would become a body of philosophers. If we need philosophers anywhere *especially*, it is among those who organize and control our systems and institutions of education.

The barbarian conception of education, which mankind have not yet outgrown, coming from a period when science was scorned, is, that education is the acquisition of a command of language and familiarity with literature, opinions and speculations. This is the fundamental conception, to which is added the knowledge of mathematics and of history. By the strenuous exertions of educational reformers something has been added to this in modern times. The physical sciences have asserted their claims. Ethics and sociology, in the form of political economy, are getting some recognition, and the spirit of progress is making so many additional improvements in different institutions that it is difficult to make any exact estimate of their present status.

But all this is merely intellectual and chiefly literary. As an intellectual education it is defective, because it does not teach that originality of thought *upon which the world's progress depends.* It fails to develop origi-

nality and power of independent thought; it fails to develop invention; it fails to overcome dogmatism and prejudice; it fails to develop liberality of thought; it fails to develop the power of reasoning upon testimony and evidence in reference to new truths, and all things which are beyond the accustomed routine. The most educated men are often *below the average of society*, in the ability to discard prejudice and to ascertain the existence of any truth foreign to their training. Such education does not qualify men to lead society into new truths, new arts, and a better social condition. It is not so hopelessly repressive as the Chinese system; but it is negative, adding little to the onward and upward movement of society; and the profound scholar is sometimes up to the Chinese standard of immobility. It is notorious that hundreds of colleges, containing or controlling at least three-fourths of the learning, reputation and dignity of the medical profession, have not only closed their eyes against certain contemporary progress in medical science, refusing all examination of the scientific facts presented, but have assailed the new investigations with far more of partisan bitterness and malignity than was ever shown in darker ages by the partisans of Aristotle and of Des Cartes. Does not every one know that this is true of the organized hostility against the scientific investigations and discoveries of homœopathy and American eclecticism, which captivate every *individual* physician who dares to investigate them, but which have never yet received an honest and courteous investigation or even respectful treatment from the faculty of any old school college? A system of education which produces such results is a survival of barbarism, and is at war with the spirit of the nineteenth century.

But if all these barbarisms were removed by a radical change in our colleges, this would be but the beginning of reform. The whole system is wrong from top to bottom, for it is not *education*, but only *schooling*. *Intellectual training, however perfect we may make it, is not a liberal education.* It is not an education at all, but

only a fragment of an education, as an arm is a portion of a man.

It is not even the moiety of an education, for education consists of *five distinct departments*, which may be compared to the five fingers of the hand. In selecting literary education or schooling as their sole purpose, the colleges have virtually chosen the little finger, leaving the four more useful and more powerful ones to blind chance, or perhaps to atrophy or paralysis. There has been many a learned collegian, in whom four-fifths of his nature was undeveloped. If collegiate education had been truly intellectual education, in the full meaning of that expression, this criticism would still be applicable; but, instead of intellectual development, it has been simply literary training, guided by a superstitious faith in the value of dead languages. Their value was correctly estimated by Prof. Huxley when he said: "A knowledge of Greek is no more an indispensable element of liberal education, in the highest sense of the word, than is a knowledge of Sanscrit, or of the differential calculus, or of vertebrate morphology." The dead languages have been obtruded upon those who did not need them, to the destruction of the knowledge which they did most deplorably need, and, in some cases, to the destruction of every purpose of a liberal education. The head master of Rugby, who is certainly a very competent witness, says: "For the most boys who do Greek at a public school it is not merely useless, but pernicious. Greek is for them a lesson in slipshod. They never get the ideal, nor even the idea of doing their work perfectly. They give up the attempt at being sure of it; and nothing can be more demoralizing to the intellect than this."

The *five indispensable elements* of a liberal education are these:

First, and most necessary, physiological development; the formation of the manly, active, healthy constitution, competent to live a hundred years—competent to win success in life by unflagging energy—competent to enjoy life, and thus become a source of

happiness to others, instead of a pauper or an invalid—competent to transmit life, health and joy to the thousands of future ages—competent to meet all the difficulties of life triumphantly, instead of struggling in misery and railing at society and at Divine Providence. Such are the men society needs, but if our colleges would look back two thousand years they would see how much better this education was conducted then. Instead of *making* men and women, the colleges have often impaired or destroyed them; broken them down so often that it is even made an argument against education, and especially against the education of women, that education is dangerous to health.

Thus the educational systems of two thousand years have at last culminated in this self-evident absurdity, that education is an injurious process; as if the very meaning of the word education had been forgotten. A grosser falsehood never has been current so long in civilized society. Education means development and growth of our powers and organs, and true education is necessarily healthful and pleasant.

A male or female school which does not develop its pupils, which does not send them home in better health and development than when they were received, ought to be abolished as a mistake, if not a nuisance. Such schools would never have existed, but for the barbarous ideas of education maintained and propagated by the colleges, which train the little finger, while the other four are tied up in helplessness.

This physical destruction is utterly inexcusable, even when physical training is impossible, for *intellectual education is not injurious to physical health*, but beneficial, and it were easy to prove this if I had time. But a *false system* of intellectual training, which worries and fatigues the mind and injures the brain, does impair the health, because it is not education, but drudgery, worry, tyranny, and exhaustion, which are the reverse of education. True intellectual education is animating, joyous, and healthful; but such an education is like angels' visits to the school-room. The

angels prefer to visit the Kindergarten and the Industrial Palace of M. Godin, in France. And I doubt not they often visit Northampton, Vassar, and the other nurseries of young angels.

2. The second element of a liberal education is training for the business and duties of life—in other words, INDUSTRIAL EDUCATION, without some share of which it were better for a man that he had never been born; for without industrial capacity (unless a hereditary capitalist) he must be either a beggar, a thief, or a swindler. It is one of the greatest crimes of society that in withholding industrial education from woman it has forced upon her these alternatives, with the addition of legal and illegal prostitution. When we all confess our sins in this matter some of us can plead to the recording angel that *our medical colleges* have always been open to women, teaching them not to be noisy babblers, but to be ministering angels in the chamber of suffering.

Our colleges *generally* have educated American citizens as if they were the sons of wealthy noblemen, who needed only intellectual accomplishments. Silently, but effectively, they have taught them to look with contempt on manual labor as something degrading; to speak with contempt of money and the arts by which it is honestly acquired; to aspire to professional life and office-holding, and to glory in the military exploits of the crowned felons who have ravaged the homes of civilization with wholesale homicide and arson. It is no palliation that these things are not ostensibly and expressly taught, for the silent teaching is often the most effective.

College education is thus largely demoralizing. The world is full of wrecks and failures from inefficiency, for which colleges are often responsible, and has been continually ravaged by wars in which the college-taught have been the leaders and instigators, instead of being conservative and moral influences to teach mankind their brotherhood. When the college knows nothing of universal brotherhood, and the church on which it leans also knows nothing of uni-

versal brotherhood, having its chaplains, its deacons, bishops, and members fighting against each other in every war, what can we expect but the satanic reign of national crime, desolation, and misery, perpetuated by the national debt that crushes out the life of labor. We need true churches and true colleges, *whose walls are not stained with human blood*, by whose influence swords and cannons shall be turned into ploughshares and anvils.

In neglecting physiological education we have degenerated the human race, impaired its efficiency, and saddled on its back a costly medical profession—ten times as many physicians as should be needed, who struggle to prolong lives that are hardly worth preserving—that perpetuate physical and moral degeneracy.

In neglecting industrial education we have produced a race of soft-handed, soft-muscled men, who struggle to escape man's first duty, *useful production*, and to live at others' expense by the innumerable methods of financial stratagem. The reign of fraud will never cease until each man is taught that life presents this sharp alternative—useful production or the *life of a vampire*. He who has attained manhood without being trained to useful production, may justly utter maledictions against parents and schools for having blasted his life and deprived him of the only solid foundation of honor and prosperity.

Industrial education, giving the mastery of productive arts, is the second necessity as the development of the body is the first. The college says, if you *condescend* to acquire an industrial education, there is time enough *after* your literary education is completed, and therefore it excludes industrial education and builds the man without certain necessary elements of manliness, as the habits of twelve years of literary effeminacy must cling through life. Would it be rational to confine a baby to the cradle for ten years, on the pretext that it must first acquire language perfectly before it learns to walk? The infant would be impaired for life, as men are impaired by any system which

for many years separates practical from literary culture.

Under this antiquated system intellect is trained to adorn with effeminacy and pedantry selfish ambitions, while the workshops and the farms are surrendered to ignorance and blind routine. Invention lags behind necessity; the lands are worn out; the wheat-field that ought to produce thirty bushels per acre produces ten, and the work that one man ought to do in eight hours occupies three men twelve hours. At the close of day they come to cheerless homes where their wives are equally exhausted by toil. Thus the laborer is brutalized by ignorant toil, and classes are separated by broad, dividing lines of caste that limit fraternity and are premonitory of social convulsions, the end of which none can foresee.

When industrial education shall have become universal, we shall not only have a more honest and manly and fraternal race, but our fields will be more than doubled in their production, and our arts advanced from twofold to tenfold in their product; and in the abundance thus produced poverty and pauperism will be submerged, as the Desert of Sahara will be gone when the ocean flood is let in upon it.

Does any one doubt the practicability of this? I would say that it is an easy matter to make every young man and woman *proficient in more than five profitable occupations*, not only without detriment, but with positive benefit to their literary education. The progress of industrial education in Europe will ere long furnish a triumphant demonstration of this; and in this country the Massachusetts Institute of Technology (under President Runkle) and several other institutions are making rapid progress in the demonstration.

3. The third element of a liberal education, next in importance to the physical and industrial, is the MEDICAL. It has become a familiar thought that anatomy, physiology, and hygiene are necessary elements of a liberal education; but it demands much more.

The first duty of a man is to sustain himself—that

he be not a burden to others. This corresponds to industrial education. The second duty is akin to the first two elements of education. It is to sustain himself in full vigor of mind, soul and body, that he may perform every duty, and be a help instead of a burden to those around him. Without this second duty performed, physiological development and industrial culture are both failures; and *without either of these three indispensable qualifications the man himself may be a total failure.* Therefore *these three* are the first elements of a liberal education. With physiological development and industrial qualifications, the MEDICAL EDUCATION which I ask *for all men and women* will enable them to live without failure in the performance of every duty and the diffusion of a beneficent influence.

It is said that Col. Ingersoll recommended as an improvement on the plans of Divine Providence that health should be contagious instead of disease. I have demonstrated, and am daily demonstrating to my pupils and patients, that health is contagious. The man who maintains high health is a fountain of health to all around him.

I am speaking really of a *moral duty.* No man has a right to be drunk, and *no man has a right to be sick.* He gets sick, if not by poverty or exposure, either through profligacy or ignorance, and he has no right to be either profligate or ignorant, even if the college trains him up in ignorance of himself.

My demand for a medical education for all sounds extravagant when it is first heard: it brings up a terrific array of surgery, obstetrics, and death-bed consultations; but I mean nothing of that sort. I mean an education by which disease shall be stamped out in its incipience. I mean that disease should be treated as a mad dog, who is entirely harmless if you do not allow him to insert his teeth in your flesh. When you are trained to high health you should resolve to live on that high plane, inaccessible to disease. Its first approaches are easily repelled. The great majority of diseases can be repelled without the use of

drugs. Allow me, I pray, to speak *ex cathedra* as a medical professor, referring to what I am teaching to students and proving by experiments. Call at my office in New York, and I will prove what at present I only hint at, for want of time. I will show you what I mean—how thoroughly men and women may be protected from disease by methods almost unknown in the schools, and enabled to break up attacks of disease as soon as they are aware of its presence.

By such a medical education as I propose nine-tenths of all the disease that ravages society would be annihilated, and nine-tenths of the physicians and the medical schools granted a furlough for life.

One-half the time that is usually expended on the Latin language would be sufficient for such a medical education as I propose for every man and every woman—but more especially for every woman, to whom it is far more necessary and valuable than rhetoric, grammar, arithmetic, geography, history, languages, and music.

4. With physical, industrial, and medical education, man is *just prepared to live.* But that his *life shall be worth living*, shall be a blessing to himself and the world, we need the fourth element of a liberal education, which is to make him a good and happy man—the moral, or ethical, or religious education. Either of these words, rightly understood, conveys the full idea, for each should mean the same; although contracted and perverted by vulgar usage, each word has but half its proper meaning. I mean the education which shall exalt man to the plane of a happy, a holy, and a glorious life, in harmony with the Divine nature—a life so high that it shall be in communion with the angels—a life so beneficent that it shall diffuse happiness around to all and leave a blessed fragrance behind in all the atmosphere that it filled.

Is this an idle dream of possibilities? I say it is not, for heaven has many saints who have led such a life, and almost every one can recognize, if not within his reach at present, at least somewhere on the horizon of his life, some one who was born to bless by loving

ways and deeds, and whose memory as we look up to heaven is a blessing like the falling dew.

Colleges are supposed to be devoted to intelligence, but I affirm that they should be devoted *first to virtue*, and that it is as practicable to take the plasmic elements of youth, and thereof make *a good man*, as it is to make an *intelligent* or wise one. Intellectual without moral education simply increases the dangerous and corrupting elements of society. It gives the sceptre of knowledge into the hands of the social Lucifers.

Moral education I demand, but the word has an impoverished meaning—perhaps ethical is better, and religious is better still. But these words are so impoverished and enfeebled by the moral malaria of society that I would willingly drop them all, to say that I mean *the education of the soul*—the education that shall make it truly *the temple of the living God.**

What I mean by moral education—what are the *new processes to be adopted*, what glorious results *it has realized*, where it has to any extent been adopted, in converting young criminals into good citizens, and how thoroughly this disposes of all questions concerning college government and prison discipline; still more, how powerfully this moral education reenforces intellectual education, giving it a zeal, a fertility and a power before unknown, time forbids me to say; and I can only refer to my published lecture on Moral Education and to the doctrine of "Full-Orbed Education," the principles of which were received with great favor at the meeting of the National Educational Association in Minneapolis.

5. These are the four elements of a *liberal education*, in the order of their necessity—the Physical, the Industrial, the Medical, and the Moral—all more necessary than the fifth, the literary or the *intellectual*, which,

* It is pleasant to find such principles partially recognized in theory, even when universally disregarded in practice, as when President Noah Porter of Yale said at a recent college convention, "There was one thing which Yale had received from the fathers, and which they always insisted on, and that was that *manhood and character were better than knowledge.*"

as it has been conducted heretofore, I regard as the little finger of the educational hand. I would change it, however, by developing the power of original thought and invention, until this feeble little finger shall become the *index finger*, to point the way to a new social condition of intelligence, prosperity and happiness, in which the wisdom of the Divine plan of humanity shall be illustrated by the heavenly life on earth.

If I am asked how colleges which now give *but one* of the necessary elements of a liberal education shall perform the miracle of giving the whole five in the same limited time, I reply that it requires no more *time* to exercise five fingers simultaneously than to exercise one. The five elements of a liberal education naturally intermingle and unite like inter-diffused gases that aid each other's elasticity. The co-education of all our powers is natural, easy and pleasant, while the repressive system so long in vogue involves fatigue, disgust, tyranny, disorder, demoralization and a positive aversion if not to study at least to true intellectual progress.

Every organ of brain and body, every faculty of the soul brought into operation grows and develops, aided by the others, and at the same time adds to the sum total of vital and spiritual power that sustains and impels the whole.

I believe, therefore, and it is not merely a scientific opinion, but is practically sustained by a large amount of evidence which time does not allow me to present, that the true LIBERAL EDUCATION requires no more time than the old *fractional system*, and that the first eighteen years of life are amply sufficient for a liberal education—the co-education of soul and body, the co-education of man and woman, the co-education of the material and spiritual worlds, which shall harmonize humanity with itself, man with nature, and earth with heaven.

We need a vast elevation in the ideal of liberal education and the conception of the power and duty of schools. THE SCHOOL IS OMNIPOTENT because it takes hold of humanity in its pliable condition when it is at our mercy in its feebleness. The oak is immovable, but

when it first appears from the acorn an infant may decide its destiny—its life or death, form and limits of development. In the infants of to-day we control the possibilities of all coming generations for glory or despair, life or extinction.

A perfect liberal education should extinguish the elements of hereditary disease, and fortify against their possible development. The illiberal education of to-day leaves hereditary disease untouched and adds new elements of debility and death in aching heads, enfeebled eyes, impaired spinal and muscular conditions, nervous, hysteric, anemic and consumptive tendencies, enfeebled digestion, sentimental indolence and aversion to labor, the consequences of which are seen in all civilized nations, in diminishing vital energy, increasing mortality, unfitness for military service, inability to bear heroic medical treatment (compelling a change in practice), increase of insanity and idiocy, increase of illegitimacy, abortion, pauperism and crime.

A perfect liberal education would prepare every individual for his life pursuit, as thoroughly at least as the lawyer is prepared for practice. It would double the general productiveness of labor, and thus extinguish poverty while developing a vast amount of mechanical genius by cultivating originality and invention as well as mechanical skill, and thus accelerate the development of inventions and discoveries that give us the command of nature's boundless resources. The increase of wealth thus arising would in a few generations by its own increasing power give us the ability to achieve all that philanthropy and science demand. With abundant and cheap capital thus at command, even the homeless orphan would find in his skilled labor the road to wealth.

Our illiberal system of education, confining its training for life to the literary professions, degrades labor, drives ambitious men into non-manual vocations, and leaves the industrial classes, or a large portion of them, ignorant and degraded, unable to better their condition, crushing each other in blind competition for employment, helpless to employ themselves, dependent

on capital and corporations, struggling for a meagre subsistence, living half the length of days enjoyed by the prosperous, and with their short lives beclouded by disease and the grief of premature deaths in their families, while the whole struggle of life lowers their moral nature, tempts to crime, and invites to suicide—in which they find uniting with them many of the superficially prosperous but ill-trained, to whom life yields no substantial joy. Of such material is society composed, which continually threatens by social convulsions to fall into anarchy—a disorder that is kept at bay only by the policeman's club and the soldier's bayonet. There is no possible remedy for this but industrial education, to restore prosperity, and moral education, to restore peace and good-will.

Liberal education would give to woman health, energy, and independence, enabling her to live in comfort until attracted by a true love to the conjugal home; and in that home, while contributing to its financial prosperity, she would be able to bring forth worthy children and to send them forth to life's battle physically and morally sound and capable of advancing beyond their parents.

Illiberal education has either left the female mind undeveloped or given it a more flimsy and poorer education than the male. It has kept her isolated from society, feeble and timid, romantic, delicate, hysterical, credulous, and ready to be a victim of masculine deceit, to marry blindly or to marry for a subsistence which she cannot earn for herself, and thus pass into a life of conscious subjection, enduring passively the evils into which she has been plunged. Ignorant of her chief maternal duties, of hygiene, physiology, and reproduction, she languishes in feeble health and transmits her infirmities to her children, whom she has been taught to rear as ignorantly as she was reared herself.

Liberal education makes the school-room a delightful place, to which the children resort with eagerness, in which their songs maintain a spirit of harmony, obedience and love, and the voice of threatening is never heard; in which they grow into habits of polite-

ness, friendliness, hospitality, obedience, diligence, zeal, energy, manliness, self-respect, truthfulness, and cheerfulness, which enable them to set examples that improve their seniors, and to begin life with a stock of religious virtue sufficient to defy temptation.

Illiberal education has carried its subjects into an unreal realm of thought, or perhaps into the mists of metaphysics; has surrounded them with the mummies of antiquity and made them more familiar with the charnel-house of nations than with the living condition of humanity; it has taught them the glory of the useless and the baseness of the useful; it has taught them that literature is worth more than the discharge of duty in sustaining ourselves and our families; that the immense mass of practical science which exists in the workshops and sustains nations is hardly worthy of a thought; that the condition of the mass of humanity is not a matter of serious inquiry, except it be in the cold calculations of political economy as a matter of national wealth and power, but that the exploits of crowned and epauletted felons who have ravaged the world in devilish brigandage are the chief matters of admiration in history and imitation in our own career. It has taught them to look to physical science and physical demonstration in all things, to the utter disregard of faith in human testimony and the recognition of our own intuitions; and if perchance it has taught anything of Christianity it is merely as a matter of remote history and blind faith, because it is authoritative and not demonstrable by the true scientific standard, but never as a living truth, with spiritual evidences above all science. And lest its unnatural teachings should lose their hold on the pupil it has taught him by precept and still more by example to ignore the other side and its arguments on every disputed question, and hold fast to authority on pain of incurring the sentence of proscription or intellectual *Boycotting*, which dogmatic authority wields as its sceptre. As for the ethical elements of present and eternal life, illiberal education has left its subjects as it found them, or perhaps has left them to dislike au-

thority, to avoid books of useful instruction, to consider idle sport the supremest pleasure and labor the greatest degradation, to be moved chiefly by rivalry and jealousy, to scoff at profound moral truths, to assail or ignore whatever does not accord with their prejudices or with a low animal view of life, to trifle with all solemn thoughts, to ignore the welfare of others, to look to money, power, and ostentation as the goal of life, and to pursue that aim without regard to the laws of health, without regard to any high principle (perhaps without regard even to law), and to ignore the laws of our eternal destiny until the cold hand of hovering death shuts out all scenes of earthly ambition and rouses a debased soul to the consciousness that it is plunging into the darkness of eternity.

In short, illiberal education is responsible for the vast increase of debasement, of crime, suicide, insanity, pauperism, and mortality which statistics alarmingly prove to have occurred in the present century, during which, while religion and morals have declined, intemperance has much more than doubled in that English-speaking race which is destined to be the leading power of the world.

The chief hindrance to the adoption of a just conception of liberal education has been the false conception imparted from a state of society at war with American Democracy. That false conception is in deadly hostility to the American system. The liberal education of monarchies and oligarchies is that which suits hereditary rulers and priests and which is void of the most essential moral principles—recognizing no obligation to industry, no obligation to economy, no obligation to peace either in personal or national affairs, no obligation to temperance, no fraternity among men, no duty of intellectual progression, but a continual preference of the past over the present and future, of ostentation over utility, of pedantic research over useful knowledge, of learning over genius, of rank over merit, and of military glory over all the benevolent achievements of peace.

The ideal system of liberal education in its highest

sphere was well expressed by J. S. Mill, but to quote his language seems like satirizing our existing systems.

"There is an education of which it cannot be pretended that the public are competent judges—the education *by which great minds are formed.* To rear up minds with aspirations and faculties above the herd, capable of leading on their countrymen to greater achievements in virtue, intelligence, and social well-being; to do this and likewise so to educate the leisured classes of the community generally that they may participate as far as possible in the qualities of these superior spirits and be prepared to appreciate them and follow their steps. These are purposes requiring institutions of education placed above dependence on the immediate pleasure *of that very multitude whom they are designed to elevate.* These are the ends for which endowed universities are desirable; they are those which *endowed universities profess to aim at,* and *greater is their disgrace* if, having undertaken this task, and claiming credit for fulfilling it, *they leave it unfulfilled.*"

Noble as is the conception of Mr. Mill, how thoroughly Utopian is it as applied to universities which have always been the strongholds of conservatism, identified with all old bigotries, and intimately associated with dominant classes who need elevation of sentiment as much as the lower orders. No mere intellectual ambition can originate or sustain the ideal university of Mr. Mill. It is essentially a new institution, as different from the old universities as American democracy from the Czarism of Russia. The university that is to elevate humanity must have in itself *the elevating power*, and the only *elevating power* under the sun is the moral power—the power that elevates men's lives and aims, the power of Divine love, to establish which Jesus died; the power that banishes gloom, indolence, selfishness, discord, and stolid prejudice, and unites all in the harmonious pursuit of truth, of science, of wisdom, and the application thereof to the improvement of society. This power illuminates and clarifies the intellect, making it open to a flood of new truth, and brings man every hour nearer to the Divine wisdom, as it led the inspired of old into that high sphere of thought in which the future is revealed.

There is more of this elevating and ennobling power

in the ministrations of some sincere followers of Christ, themselves pervaded by his spirit, and leading others on to lives of consecration, than in all the universities of the world, for they are unable to elevate men to any higher level than their own, which is simply the monotonous life of respectability in established opinion, comfortable salaries, contented ease, and profound indifference to the essential rights of man, the condition of the laboring multitudes, the fate of toiling inventors and discoverers, and the battle of new truths with hoary errors.

It is possible that old institutions may be gradually pervaded by the spirit of progress and philanthropy, but I have far more faith in the value of new institutions founded on the love of God and man, devoted to useful knowledge, to profoundest views of life and nature, and to *preparation* for the duties of life, which will make the pupils truly the leaders and elevators of society.

But what such universities should be, and could be, I may discuss more fully hereafter for the benefit of those whose clear intuitions receive the inculcations of this volume. I prefer in this volume to indicate the principles of progress and nature of educational reform rather than to provoke skepticism by sketching the ideal university which should be the antithesis of the conservative university, which was well described by Professor Angelo de Gubernatis, of Florence, as he has observed that institution in Italy, as follows:

"Under the present system the university is too widely estranged from our every-day life, and too indifferent to it. Where vital force should be most felt it is wholly lacking. Students enter the universities and issue therefrom in much the same manner as did the prophet Jonah enter and come forth from the gloomy recesses of the whale. They go there to learn the mysteries of science, but of the science of life, by far the most important of all, they come away ignorant. One student studies four years, another five, another six; but they are all equally ignorant of the art of living. The university should properly be the *mother of genius and of character;* it is instead merely the censor for a certain number of years of a crowd of boys, who are forced to cheat at the examinations in

order to rise from grade to grade till the desired doctor's vote is obtained. Then they are all obliged to feed together like sheep in a pasture; the examinations are the same for all, given at stated intervals and in a like manner for all; votes are cast with the same judgment, or rather lack of judgment, since *the best parrot of the class* can pass the most brilliant examination, and consequently gain the vote, while the greatest genius may perhaps lose the contest, disheartened by the trying formalities of the proceedings. It is never taken into account that one student might perhaps merit the title of doctor after only a month of trial, while another might fail to deserve it even at the expiration of twenty years. Should there be a few intellects more active than those around them, this discipline speedily brings them to the common level." "At present there is almost no intercourse between the university and the world without, and while from within it appears to be a great institution, outside its walls its influence is unfelt."

It can be only partially true that the influence of the university is unfelt outside of its walls. It may have no direct immediate influence, but it has a great influence in ultimately moulding public opinion. The public opinion that tolerates war and glories in military rank as the highest aim of life is generated in universities by the study of military history and practice of military ethics, which are exactly the antipodes of true Christian ethics. Until within the last five years duelling was the leading feature of university life in Germany. "At one time (says the *London Standard*) these student-duels were really as formidable as the name might imply. The chief aim of the combatants was to maim each other, and to cut off an ear or the end of a nose was accounted a feat worthy of all honor. At first this method of settling differences was resorted to only in cases of extreme difficulty, but latterly on any pretence, or none at all, a challenge was sent, until, as the fatality of the duels decreased, their number multiplied so prodigiously that duelling in some of the universities, such as those Leipzig, Berlin, Jena, and Göttingen, became a pupil mania and a public nuisance. In Göttingen as many as thirty have been fought in one day, and some of these, even within the memory of this generation, were fatal. There was hardly an attempt at concealment. The hotel-keeper brought out a cask of beer; half of

the steubel-shod students attended to drink it, and critically watched the fun. If—rare chance—a student was killed his opponent received from the university a *consilium abeundi*, or hint to quit. He accordingly "went down." But his *relegatio*, or expulsion, did not prevent him entering another university. If he were unfortunate enough to kill his man a second time the way to further academic distinction was barred."

We have nothing like this in America, but it is a part of the cosmopolitan influence which forms the literature and public sentiment of the world. From students thus educated have come the cold skepticism, the lame speculation, and the terribly gloomy pessimism of German literature. The duelling student grows up as the materialistic scientist, the vaguely skeptical philosophizer, the iron-handed ruler of his country, and the soldier, ready to welcome any war that is deemed politic.

In America we have schools especially pervaded with the military idea, dressing their students in military uniforms, calling them cadets, and training them in military drill, as if soldiering were to be their profession, while all our schools are pervaded by the spirit of the histories of wars, and their pupils are fascinated by the sounds of martial music and the display of military parades, while the processes of useful industry occur to their imaginations only as repulsive drudgery, far beneath the dignity of literary occupations.

The entire degradation and perversion of education *has been caused by the exclusion of ethical influence and principles*, and will cease when the ethical element shall be introduced.

Uninspired by love, primary education has been simply a tyrannical enforcement of tasks, generating, like all tyranny, sullen discontent, secret hate, furtive evasion or restless disobedience, and steadily maintaining a low moral status. With proper ethical sentiments the teacher who has all the world's wealth of intellectual delight and information at command

would be the most fascinating companion to whom his pupils could approach, and the school would be their favorite resort, exclusion from which would be keenly felt as a punishment.

Uninspired by love, the higher education has been a selection of themes and tasks without regard to the welfare of the pupil, and without any thought of qualifying him to reach a higher stage in civilization, or to get rid of the errors inherited from ancestry or instilled by teachers.

The welfare of the pupil depended upon an enlightened understanding of the pursuits in which his life was to be passed, but no preparation for life-pursuits was given, except to the lawyer, the priest, and the physician. To abolish the special schools of law, medicine, and theology, and leave the students to gather their knowledge by apprenticeship or by chance medley would be considered at this time a social outrage; but the entire mass of society outside of those professions has been subjected to such an outrage time out of mind, and all classes, including the professional, have been subjected to a wrong of equally injurious nature, in being totally unprepared * for any honorable and useful career when their college course is finished, and also deprived of knowledge of the science of life and of hygienic training for healthy development, hence doomed to suffer by unprevented disease and premature death.

It is no wonder that such an educational system, with its cold indifference to the happiness of its subjects, is not esteemed by them; that the boy has trudged unwillingly to school, rejoicing whenever he could escape, and the older youth have manifested a chronic disposition to disorder and rebellion when not controlled by efficient authority—in short, the whole educational

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* The New York *Sun* says of the college graduate: "He has spent four years, not in learning the specific things he requires at the end, but in getting a smattering knowledge about languages, mathematics, philosophy, and science, which is of little practical benefit to him."

system has been maintained by outside force instead of internal vitality.

Unable to demonstrate a satisfactory value in their education, the young men and their parents have been unwilling to pay the price of what was to many rather more a costly bauble than a necessary or useful article, and our colleges would have been feebly maintained or starved out of existence had they not been sustained by charitable donations or endowments. Schools which qualify men for their pursuits are sustained by the voluntary payments of those they instruct. Medical, legal, business, and technical schools are sustained by their fees, but literary colleges, with all the influences of fashion, example, and public opinion in their favor, cannot sustain themselves, because they do not give an equivalent for the time and money they consume. Hence their tuition fees do not pay half their expenses. The entire tuition fees of American colleges in 1878 amounted to much less than half their total income, which was $4,613,137, of which the tuition fees were $1,929,060.

The students who resort to medical schools, and whose payments sustain the colleges, are certainly not more affluent than those who resort to the literary colleges, which are kept alive by endowments to enable them to maintain an effete system.

When that system shall be abandoned, and all schools shall give their pupils precisely what they need, qualifying them for a successful life, and placing them on a higher plane of capability, efficiency, and personal worth than that of the average citizen, or the average graduate of the old style college, their halls will be filled by multitudes, and they will not need to be beggars for philanthropic generosity.

That such unendowed schools may be established by energetic teachers and with some aid from loans at their beginning may grow into flourishing universities I do not doubt. By the proper combination of technical instruction and industrial occupation such universities would be enabled to bring a truly liberal education within the reach of every earnest, industri-

ous young man or woman who is not burdened by the necessity of sustaining at the same time the dependent members of their families.

Thus to make education accessible to all, and to make it a full development of the moral nature which makes life worth living, of the physiological strength and hygienic knowledge which make a complete life possible, of the practical knowledge and skill which make life successful, and of the observing, thinking, investigating, and originating mind which guides to universal improvement—this is indeed a *liberal education.*

CHAPTER II.

MORAL EDUCATION.*

Its true meaning, its power, and its universal neglect.—Its paramount importance.—Necessity of elevating the status of the teacher.—Failure of old methods.—Success of M. Wichern at the Rauhen Haus.—His methods.—Reformatory schools of Mettray, Red Hill, and Birmingham.—Success of Mr. Howe and the State Reform School of Ohio at Lancaster.—Description of its methods and results.—Burnham Wadwell in the Virginia State Prison.—Combination of intellectual, moral and practical education.—Power of large schools and public sentiment among the youth for good or evil.—Superiority of the pupils at Lancaster in deportment and diligence.—Wonderful success of Fellenberg at Hofwyl.—Testimony of Mr. Owen.—Indians at Hampton Institute.—The cardinal principle of moral education, a new suggestion.—The eye for intellect, the ear for emotion.—Necessity of oral and vocal education.—Our own voice the most effective.—Power of song.—Necessity of daily singing.—Simplicity and eloquence in music.—Testimony of Rev. Mr. Mayo.—The ear the channel of moral education, the larynx the instrument.—The example of the kindergarten.—Happiness, variety, visible and oral instruction, vocal music, activity, the teacher's voice, religious influence.

MORAL education as commonly understood is not a very brilliant or interesting theme. The phrase has a grand meaning if we reason it out, but words do not pass current by their normal meaning. All words and phrases are liable to degenerate in use. *Villain* and *miscreant* were originally and normally terms of very respectable meaning, but they degenerated until they signified scoundrels. *Metaphysics* was normally a word of lofty import, implying the highest sphere of knowledge, but it has so degenerated that to-day it implies mere empty and worthless speculation.

So moral education, which normally means the elevation of man to the loftiest condition that he is capa-

* An address delivered before a teachers' association at Louisville, Ky., in 1875.

ble of occupying, signifies in most men's minds merely repressing the extravagant vices and animality of youth, and giving them a respectable knowledge of the moral code. But this is not moral education any more than a police court is a temple of religion. It is merely a piece of necessary self-defence against animality. The science of moral education is not yet systematically developed, and the art of moral education has yet to be organized and put in practice in our public schools. It is a very remarkable fact that now, near the end of the nineteenth century, there is no recognized system of moral education, and no science in vogue developing its true principles. I do not mean that there has been no moral teaching, no moral influence in schools, or no moral results, but simply that there has been no scientific system, no adequate comprehension of the moral power, nothing but the instinctive movements of common sense without a scientific plan.

The idea that the moral nature is just as educable as the intellectual nature, and that it is just as practicable to make a good man as a wise and enlightened one, is not yet entertained or acted on in literary institutions. The idea is, practically speaking, so new that it may even be necessary to prove that I am not visionary or utopian in presenting it, and claiming for education more than its friends have ever yet demanded, more than any college, excepting perhaps Fellenberg's, has ever yet demonstrated to be possible, and more than any philosopher has shown by reason to be within the bounds of probability.

The value, the power, and the practicability of moral education have not been known, because all men have given their attention to intellectual education, fully believing in intellectual development by educational institutions, which would give their pupils intellectual superiority; but not believing, not even hoping that such institutions would raise their pupils into moral superiority over the rest of mankind. But that is what I do believe and claim for moral education. If that claim be just, it is one that should arrest

the attention of the whole civilized world, for it is the most cheering and hopeful statement that has ever fallen on the ears of the philanthropist, while it is the most revolutionary suggestion that has ever been addressed to the practical teacher.

You will agree with me that it is not a debatable question whether a man's moral or intellectual life is of the greatest value, for happiness is as high above intelligence as the heavens above the earth; nor is it at all debatable whether it were better for our country to be filled with shrewd and intelligent scoundrels or with good but ignorant men. Ignorance is a trivial matter in comparison to crime, and intellectual shrewdness is no compensation for the loss of virtue and happiness. I claim therefore that moral education in its highest sense is incomparably more important than intellectual education; and as our educational systems have heretofore been not moral but intellectual, they are but left-handed affairs, and have yet to acquire their strong right arm. It is almost impossible to make education purely intellectual; but if we could educate men forever on the intellectual plan, and if there could be no moral element in the education, they would be no better, no happier in the end; there would be as much of fraud and strife, murder and misery, as much of poverty, despair and suicide, as when we began. Two of the most intellectual, brilliant, and educated men I have ever known terminated their lives by their own hands, because all their intelligence brought no happiness; their lives were hollow mockeries; and just such a despairing mockery is that splendid civilization in which literature, art, science, machinery, and architecture make an outward display, while the whiskey-shop, the street mob, the workhouse, the penitentiary, the police court, the foundling hospital, and the insane asylum tell the inside story of its misery. Amid the brilliant civilization of Paris there are to-day many thousand criminals.

We have had too much of the intellectual without the moral education; and although the world is far better now than in the days of the Roman Empire it

is still crammed with misery and crime. The laborers of Europe, living on from one to three dollars a week, are kept in squalid ignorance, and their bread is taken by taxes to feed four million men who live only for the purpose of homicide by bullet and bayonet. The great nations of Europe devote their wealth to standing armies and the debts of war; and while they profess to represent the highest civilization of Christendom, which professes allegiance to the law of love, they live as brigands do, with their swords pointed at each other's throats, every one of them believing that if they could not defend themselves, their so-called Christian neighbors would invade, conquer, rob and enslave them. Each nation thus declares that it considers its neighbors an organized banditti, and this universal opinion must have some foundation. Gloomy as it seems, this is the universal condition which "is now, ever has been, and ever shall be," unless moral education can change the scene. That noble apostle of education, my friend Horace Mann (who is now among the saints), said in a lecture often delivered:

"The world is to be redeemed. In six thousand years, with exceptions 'few and far between,' the earth has been a dwelling-place of woe. There has not been an hour since it was peopled when war has not raged like a conflagration on some part of the surface. In the haughtiness of despotism on the one hand, and the debasement of vassalage on the other, the idea of human brotherhood has been lost. The policy of the wisest nations has been no higher than to punish the crimes they permitted, instead of rewarding the virtues they had cherished. Throughout the earth until lately, and now in more than three of its five grand divisions, the soldier and the priest have divided and devoured it. The mass of the human race has sojourned with animals, that is, in the region of the animal appetites; and though the moral realms have been discovered, yet how feebly have they been colonized. But it is impiety to suppose that this night of darkness and cloud will always envelop the earth. A brighter day is dawning, and education is its day-star. The honor of ushering in this day is reserved for those who train up children in the way they should go. Through this divinely-appointed instrumentality more than by all other agencies the night of ignorance and superstition is to be dispelled, swords beat into ploughshares, captives ransomed, and rivers of plenty made to run where the rivers of intemperance now flow. At this sight 'angels look on and hold their breath, burning to mingle in the conflict.'"

If teachers are to be the chief instruments for the redemption of mankind, they must rise to the dignity of their apostolic office; and the very first requisite is that the honors and rewards, the salary and the social position of teachers should be equal to those of any other profession, and that young men and women of the best abilities and social position should be induced to resort to the normal school as they now resort to colleges of law, medicine, and divinity, and should consider the diploma of a qualified teacher, earned by four years' special study, the most honorable parchment that any university can give, at once a passport to profitable occupation and to social respectability, because it would be (from a proper normal university) an evidence of the character of a thorough gentleman of more diversified culture than we find in any other profession—competent to instruct most physicians in physiology and hygiene, most clergymen in philosophy, and most attorneys in political economy and history. But to secure such men we must offer salaries of from fifteen hundred to three thousand dollars. Germans flourish on smaller salaries * because they have a better social position; but Americans are so accustomed to measuring men by money standards that he who would hold up his head well in society must have a good salary. †

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* The salaries of good teachers in Germany are better than our own average—1000 to 2000 thalers, which they often receive, being worth more there than the same number of dollars in this country. The average pay of New York teachers—$375—forbids the elevation of the profession.

† A proposal in the Boston School Board to reduce the salaries of the school-teachers of that city gave the Rev. George A. Thayer a chance to free his mind on the subject in a minority report. He had obtained estimates, he said, from careful and trustworthy persons of the incomes enjoyed by successful members of the learned professions in Boston. Fifty lawyers make $10,000 a year and upward; one hundred make from $5000 to $10,000; one hundred or more make from $3000 to $5000. Eleven doctors are believed to make $20,000 a year, forty from $10,000 to $20,000, eighty from $5000 to $10,000, and two hundred from $3000 to $5000. In three leading Protestant sects, twenty-one ministers receive salaries ranging from $4000 to $10,000. For his part, the Rev. Mr.

The Germans accomplish this purpose by giving teachers a better social position, and we may profit by their example. The report of George Nicholls to the poor-law commissioners of England says:

"In Holland there is no profession that ranks higher than that of a school-master, and a nobleman would scarcely, if at all, command more respect than is paid to many of those who devote their lives to the instruction of youth. The same personal consideration is extended to the assistant teacher or usher. We were much struck with the difference in the position of persons of this class abroad from their lot at home when we were visiting a school for the middle classes at Hesse Cassel. The first thing which drew our attention was the extreme ceremony with which we were introduced to each of the assistant masters, and the many apologies made by the professor for interrupting them, although but for a moment, in their important labors."

Mr. Kay says:

"Throughout Germany, Switzerland, Holland, Denmark, Saxony, and France great pains are taken to make the teacher's rank in society and his situation worthy of the acceptance of an educated man; his salary . . . is fixed and certain. When a teacher has become too old or too weak to perform all his accustomed duties in the school-room, the inspector of the district decides whether he shall be dimissed with a pension* or whether the committee shall engage an assistant teacher to aid him in the school-room. The widows and children of deceased teachers are pensioned off in Saxony in the same manner as in Prussia. Another most important regulation is that no person or persons in immediate personal connection with a teacher shall have the power of dismissing him."

How different is the condition in America. "As a rule (said the N. Y. *Tribune*), teachers, however accomplished, outside of our higher institutions don't receive the social recognition that by virtue of their

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Thayer thought that Boston should seek for the teachers of its children large-minded persons, whose abilities would have earned them distinguished success in any of these other professions or in trade. But it could not get such teachers unless it was prepared to assure them honorable comfort and an old age free from care about money.—*N. Y. Sun.*

* Pensions in Prussia increase according to the length of service: after fifteen or twenty years it is equal to one-fourth of the salary; after thirty to thirty-five years the half; after fifty years three-fourths, and proportionally for intermediate terms.

important work at least they deserve. It is outrageous that a profession which in its noble and imperative work touches the mark with theology and medicine, should give its cleverest members little more than the poor necessities of life. It is the absolute truth that the salaries paid to public school-teachers are as small as in any sort of human decency can be given. . . . . Without much leisure to use the means of intellectual expansion, and without money to purchase them, he becomes a teacher by rote; his poverty first and then his will consents to a routine, without freshness and inspiration."

While thus stinting and degrading its teachers the State of New York squanders twelve or fifteen millions on a superfluous capitol building at Albany. It is not therefore poverty that forbids the proper payment of teachers; nor would such payment be burdensome with a proper arrangement of schools. A competent oral teacher instructing classes of from fifty to a hundred and sometimes two hundred would be less expensive than the tired-out and necessarily tyrannical pedagogue who dominates over thirty dissatisfied pupils arranged in ten or fifteen classes and drilled in uninteresting text books.

All educational reforms must fail unless we have good teachers: but with a superior corps of well-paid teachers, who consecrate themselves for life to their business and have all the necessary appliances, I claim that we can accomplish the moral regeneration of mankind by means that have been already tried and worked successfully.

I do not mean by the ordinary appliances, for they are notorious failures. We have in common use four methods of moral education: 1. Homilies by text-book and lecture; 2. Good advice; 3. Scolding; 4. Punishment. These methods are in use everywhere, and everywhere failures. The bad boy hears the virtues talked about in homilies until he is tired of it. He gets good advice when he is doing right, and a double dose of good advice when he is doing wrong. But it is very rare to find anybody who would thank

you for good advice, or who is willing to act on it. The man who really knows how to appreciate good advice and to act on it is already so good that he seldom needs it. If he desires it, he does not need it; and if he needs it very badly, he does not desire it, but heartily resents it. The bad boy rejects advice with contempt, and receives a liberal supply of scolding, which makes him sullen and so wicked that for his next offence he is whipped and left under the debasing influences of hatred and fear.

Moral education is the reverse of this. It takes in criminals, and turns them out good citizens by the familiar means that common sense recommends—by placing them in a moral atmosphere, and keeping them in it till their whole nature is changed, just as men are made criminals by placing them in a criminal atmosphere, and keeping them there till they are saturated with baseness. The same amount of moral power which can take criminal youth and elevate them to respectability, can take the youth of virtuous families and elevate them to pre-eminence in virtue. It is, therefore, no exaggeration to say that the schools which have reformed criminals have demonstrated an amount of power sufficient for the world's regeneration, if rightly applied.

One of the most conspicuous examples ever known of the power of moral education in redeeming and elevating criminals was at the Rauhen Haus, near Hamburg, of which we have the following account from Rev. Calvin E. Stowe:

"Hamburg is the largest commercial city of Germany, and its population is extremely crowded. Though it is highly distinguished for its benevolent institutions, and for the hospitality and integrity of its citizens, yet the very circumstances in which it is placed produce among the lowest class of its population habits of degradation and beastliness of which we have but few examples on this side of the Atlantic.

"The children, therefore, received into this institution are often of the very worst and most hopeless character. Not only are their minds most thoroughly depraved, but their very senses and bodily organizations seem to partake in the viciousness and degradation of their hearts. Their appetites are so perverted that sometimes the most loathsome and disgusting substances are preferred to

wholesome food. The superintendent, Mr. Wichern, states that though plentifully supplied with provisions, yet, when first received, some of them will steal and eat rancid grease that has been laid aside for the purpose of greasing shoes, and even catch May-bugs and devour them; and it is with the utmost difficulty that these disgusting habits are broken up.

"An ordinary man might suppose that the task of restoring such poor creatures to decency and good morals was entirely hopeless. Not so with Mr. Wichern. He took hold with the firm hope that the moral power of the Word of God is competent even to such a task. His means were prayer, the Bible, singing, affectionate conversation, severe punishment when unavoidable, and constant, steady employment in useful labor."

The place was a prison when he took it. He threw down the high walls and took away the bars and bolts. He made the children love him, and he converted them into estimable characters. Horace Mann says:

"The effect attested the almost omnipotent power of generosity and affection. Children from seven or eight to fifteen or sixteen years of age, in many of whom early and loathsome vices had nearly obliterated the stamp of humanity, were transformed not only into useful members of society, but into characters that endeared themselves to all within the sphere of their acquaintance. The children were told at the beginning that labor was the price of living, and that they must earn their own bread. . . . Charity had supplied the home to which they were invited—their own industry must do the rest.

"Music is used as one of the most efficient instruments for softening stubborn wills and calling forth tender feelings, and its deprivation is one of the punishments for delinquency. The songs and hymns have been specially adapted to the circumstances and wants of the community, and it has often happened that the singing of an appropriate hymn . . . has awakened the first-born sacred feeling in obdurate and brutified hearts. Sometimes a voice would drop from the choir, and then weeping and sobbing would be heard instead. The children would say they could not sing, they must think of their past lives, of their brothers and sisters, or of their parents living in vice and misery at home. On several occasions the singing exercises had to be given up. Frequently the children were sent to the garden to recover themselves."*

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* "Those who have had the most experience in converting the Mongolian have discovered that the power of song is a more potent lever to pry under the edge of heathen unbelief than the influence of prayer. As soon as a Celestial can be taught to sing Sabbath-school hymns he is gone, so far as his old faith is concerned."—*Salt Lake Tribune.*

One of the worst children was so much affected by the music that Mr. Mann says he could never hear certain Christmas hymns without being affected to tears. At the great Hamburg fire they acted like heroes, but refused all compensation, and after the fire gave up their provisions and their beds to the sufferers. When Mr. Mann asked Mr. Wichern how he accomplished such wonders, he simply replied that it was "by active occupation, *music*, and Christian love."

Industrial occupation, songs, and love are certainly the three chief powers in moral education. It was these three influences which have civilized and elevated the unreclaimed race in America; and for the want of these the reclaimed Indian tribes have perished. We cannot expect to find very often such a moral genius as Mr. Wichern, but many well-administered institutions are successful in reforming criminals. The wildest savages have been reclaimed at the Hampton Institute, and the Modoc Indians, who were so hard to conquer in the lava-beds, are now good citizens. Scarfaced Charley is a respectable farmer.

At the reformatory farm-school of Mettray, in France, founded by Judge Demitz for children who were condemned in court for their crimes, a similar system was pursued, and the number of children thoroughly reformed was about eighty-five per cent of all.

The reformatory farm-school at Red Hill, in Surrey County, England, takes charge of youths who are convicted of crime, or who are the children of felons. They are so successful that they impose no restraint or confinement, and their schools are as orderly and well-behaved as the schools patronized by the better classes. The reformatory schools of England, though inferior to those on the continent, do reform over two-thirds of the children in their charge.

Mr. Hill, recorder of Birmingham, said at the conference on reformatory schools at Birmingham: "I know it is the belief of many that to aim at reforming thieves is to attempt impossibilities. A shrewd gen-

tleman said he would walk a hundred miles to see a reformed thief. I think I could cure him of skepticism." He said that at the asylum at Stratton-on-Dunsmore, although they had not the means of confining the criminals, they reformed forty-eight per cent at first, and when their arrangements were improved they reformed sixty-five per cent, and these reforms were effected in about two years, at a cost of about £31 a-piece, while the average cost of unreformed culprits was, *for legal expenses*, £145.

If our legislators could look at this matter as an affair of dollars and cents alone, they might discover that for one-fourth of our present expenditure and losses by criminals the race of criminals might be so reduced that jails and penitentiaries would be almost empty.

We have at this time in the State of Ohio a reformatory institution, the State Reform School, near Lancaster, under the management of Mr. G. W. Howe, which is a wonderful example of what moral power can accomplish. My first knowledge of this institution was obtained by meeting Mr. Howe at the Prison Reform Congress, in St. Louis, in May, 1874. He told a graphic story of his labors in attempting to detain and educate young convicts on an open farm surrounded by the forest, offering every facility for escape. His heart sunk in momentary despair and alarm when on a dark night the boys, having just come from the chapel, started off with a sudden impulse into the woods, and left him alone to meditate on disappointments. It was not long, however, after their voices had been lost before he heard them again emerging from the forest, with the cry, "We've got him! We've got him!" A rough young convict, recently arrived, thought the dark night offered a fine opportunity for escape, and started off at full speed. His comrades pursued to capture him, and brought him back. Such was the general sentiment of the school that the boys would not favor or tolerate running away.

In this institution none are received but youths con-

victed of crime. The report of the board of commissioners for 1868 says:

"Of those admitted this year, thirty are under twelve years of age, and ninety are from eleven to sixteen. These juvenile offenders are, most of them, charged with grievous crimes and misdemeanors. A boy of eleven is sent for arson; another of twelve for burglary and grand larceny; and another of fourteen for robbing the United States mail. Many of our boys have been the slaves of the vilest habits and violent passions, of low and debasing propensities. Among our inmates may be found every shade of character, and every grade of intellect. The unconquered will, the ungoverned passion, the depraved appetite, with confirmed evil habits, suggest the difficulties and the discouragements in regard to their reformation."

Since the establishment of this reform school, in 1858, about two thousand of these criminal youths have been received, and all but a very small percentage have been restored to virtue, having earned an honorable discharge by good deportment for a sufficient length of time to satisfy their teachers that they were really reformed.

The reform school occupies nearly twelve hundred acres of elevated, hilly, healthy, but not productive land, six miles south of Lancaster, with buildings capable of accommodating about five hundred boys—a main building one hnndred and sixty-one feet long, eight family-buildings, four large shop-buildings, a large chapel, besides barns and other out-buildings.

In this healthy and pleasant home they are received and managed with unwearied kindness and love, and carried through a course of moral instruction perhaps the most complete and efficient that has ever been successfully applied on so large a scale. If there is in our country any better system of *intellectual, moral,* and *practical education* happily combined, I am not aware of it. I refer not to its details, but to its perfect threefold combination.

So perfect is the system that, although they receive so many young criminals from jails, they have no jail, no prison-walls, no bolted gates, but occupy an open farm in the forest, where the boys are as free as in any

country academy; and are often sent to the village or the mill on errands, without any guards; and yet there are fewer escapes than from other institutions where boys are kept strictly as prisoners within high walls and bolted doors.

A similar report, mentioning only two escapes, comes from the Board of Control of the Michigan State Reform School, in which the moral system of government is adopted, who say in a recent report: "All bars and bolts, cells and whips, have been abandoned. No unsightly fence shuts away the beautiful world without, and the love of home keeps our boys within its sheltering arms. The boys are generally contented, and realize to a great degree the fact that the Reform School supplies for them a real need, and furnishes for most of them a better home than they had been accustomed to before their admittance here."

The report of 1868 says: "When we consider that the great majority of our boys have been guilty of crime—some of them utterly reckless and desperate—it is remarkable that they can enjoy such freedom and not abuse it They not only yield quietly and submissively to all the requirements of the school themselves, but exert an influence to have all their comrades do the same."

It is an encouraging fact too, as stated in the report of 1870, that instead of finding reformation more difficult with the older boys, they have been rather more successful in establishing their moral principles; for, having more strength of character, they take a firmer hold of good principles. In this fact I think we have great encouragement to believe that many of the still older criminals who are confined in State penitentiaries will prove good subjects for moral reform when they receive benefit of a similar institution.

Indeed, I think this was fully proved by the experience of Burnham Wardwell, superintendent of the Virginia State Prison, a man whom nature designed for the management and reformation of criminals. I think we owe a much deeper debt of gratitude to moral heroes in an humble sphere than to many whom

the world honors. Fellenberg at Hofwyl, Mr. Wichern at Hamburg, Mr. Howe and his associates at Lancaster, and Burnham Wardwell in the Virginia prison are the men we should love and honor. Mr. Wardwell is not an educated man, but he has the genius of reformatory love. He treated the prisoners as brothers, and instead of governing by handcuffs and bayonets he dismissed his guards, and brought the six hundred and fifty prisoners unchained and unguarded into the chapel to hear the fervid appeals of a truly Christian minister. He so elevated their sense of honor that he could trust them anywhere, and often sent them out of prison with no escort but his little son. He tells an amusing story of a party whom he allowed to leave the prison and make a donation-visit to their chaplain. One of his fiercest prisoners carried a long, sharp knife for his donation, and when asked about it on the return of the party he said he would have cut the throats of any who would have attempted to run off!

The great merit of the Reform School of Ohio is that the education is symmetrical and complete—it is *intellectual, practical,* and *moral.* They give half their time to instruction, the other half to work; and throughout the whole they are under moral influences. Industry—the daily performance of duty in work—is the very foundation of moral culture, without which the moral nature has little stamina, and may degenerate into mere sentimentalism. It is the resolute doing of duty every hour in the day which makes the substantial moral character that will stand the conflicts of life; and as labor is the chief duty of life, it follows that no moral education is entirely substantial which does not include labor. This is the secret of the wonderful success of the reform school. Another open secret which some of my reverend friends failed to see is that in a school of three hundred youths, disciplined to duty and friendship by love, labor, and song, there is a public sentiment, an irresistible moral power, which at once controls and assimilates the new arrivals as dead flesh is assimilated into the human body.

Mr. Howe was asked somewhat incredulously about his marvellous success, because it was greater than his questioner had been accustomed to observe in families and schools. But these families and schools have not the enormous power of moral leverage which belongs to an institution with a large and well-trained band of pupils, isolated from surrounding society, forming their own public opinion under the control of their teachers, and swaying absolutely every individual.

The power of this organized sentiment was graphically described by Pres. Porter, of Yale, in his essay on "The Common Life of the College." He observes, "It is a true and pregnant saying, 'You send your child to the school-master, but 'tis the schoolboys who educate him.' The studies, the systems, and methods of teaching, the knowledge and skill of the instructors do not constitute the whole of the educating influences of the college. Often they do not furnish half of those influences which are most efficient, which are longest remembered, or which are most highly valued." "Very many, even of those college graduates who have turned to the best account all the resources which their *alma mater* could furnish, feel themselves quite at much indebted to the educating influences of its community for the awakening and direction of their energies as to their studies or their instructors." "The intellectual stimulus and education which are furnished by the college community are of a kind which neither circumstances nor instructors can impart."

In common college life all this moral and intellectual power runs riot in its own spontaneous strength, developing vices as well as virtues, so that Pres. Porter observes, "The moral powers often become paralyzed in some of their functions, and incapable either of right judgments or active feelings on certain classes of ethical questions." "That not a few are misled by its special temptations, not merely nor chiefly to vices and prodigalities of a grosser sort, but to *a refined and subtle insensibility to good that is more insidious* and not less really evil, will be confessed by many."

In the training at Lancaster all this moral power is firmly seized, controlled, and organized for good, and when it is universally realized that every collegiate institution may and should thus wield a power which is greater than any power they wield at present, society will look to college for its moral leaders and benefactors.

At Lancaster the boys of the school do all the work on the farm, raising their own food and a large amount for sale. Every hour is occupied in work, study, moral instruction, or recreation, leaving no room for any evil influence to creep in. They are divided into seven families, occupying different buildings, each family under charge of a teacher, who is called the elder brother of the family, who, with his wife or matron, attends to the personal comfort and moral management of his family, which numbers about fifty boys.

In the report of '68 we find sub-reports from the elder brothers of the Huron Family, Muskingum Family, Miami Family, Erie Family, and Maumee Family. In these families the convict-boy is received with parental kindness and soon learns to love his teachers. One of them, Mr. Darling, says (1868):

"What the teacher of such boys needs is true Christian love, sympathy, and patience. Properly armed with these weapons, he may boldly attack the heart-citadel of the worst boy who may come under the law with sure confidence of success. There is no power on earth so strong as love; and the most depraved boy has a soft spot somewhere in his heart, through which he may be touched and reclaimed, if we but perseveringly approach him in this spirit, having patience with his shortcomings and sympathy with his weakness. I am learning to feel that if a boy stubbornly and persistently resists the ordinary efforts made for his reformation, not that he is hopelessly fallen away, but the fault rather lies with myself, that through my ignorance I am not able to discover the specific remedy for his peculiar form of disease."

It is this power of kindness which enables them to say:

"We have no massive walls around our family buildings and play-grounds, and employ no police-force to guard the boys, yet very few ever escape; our boys seldom prove so unfaithful to their

trust as to attempt to leave the school in an improper manner. When they do so they not unfrequently repent of their folly and return voluntarily.

"As an evidence that our boys are properly controlled, and that they love and honor their home, words of profanity and vulgarity are never heard from their lips; quarrels are unknown; not a seat in the school-room, not a wall is defaced by cutting or marking, or soiled by words or pictures of impurity. They are loved and trusted, therefore they are contented, and, like good boys, stay at home and do their duty. Nor are they held by personal restraint and a system of espionage. Chords of love and confidence are our chains. The force that holds any well-regulated family together is the cohesive and blessed power prevailing in this family of three hundred and thirty-four boys and thirty officers and employees. For eleven years we have sent almost daily one to six boys with teams to Lancaster, a distance of six miles. Not one of these boys ever betrayed our confidence by escaping, and we never heard a single complaint of bad conduct. Indeed the citizens of Lancaster and the surrounding country have always and uniformly commended their good behavior and gentlemanly bearing. We trust our boys, and they reciprocate our confidence. A few weeks ago the Reform-school Base-ball Club played on the farm a match-game with a club made up of the most respectable young men of Lancaster, and were the winners. After the game the clubs partook of a repast kindly provided by our excellent and faithful matron, Mrs. Howe. Last week the Lancaster club kindly invited our boys to a game in town." (Report of 1869.)

The farm club was then entertained at a supper in town by the High-school Club. The report of 1870 says:

"No private dwelling in the state presents less of the rudeness and vandalism that with knife and pencil defaces and defiles its walls and furniture than ours. The same is true of our school-rooms; not a seat or a desk is the least injured. The wanton waste or destruction of property is nowhere to be seen. In the observance of the Sabbath we have evidence of the success of our institution. In no home or village in the state are the sacred hours of the day of rest, of worship, and improvement more appropriately and profitably spent. The Sunday-school is always attractive and interesting."

In addition to school-study, religious teaching, and systematic industry they have every evening a moral training, of which they say:

"It is the great moral nucleus of our institution; here we are enabled to reward, reprimand, and punish our boys, and at the same time gain their affections and hold the keys to their hearts. Each

boy is conversed with and interrogated as to his thoughts and conduct during the day, and specially urged to record in his diary something learned or some good act actually performed. The promises made here are generally considered sacred.

"A visitor remarked in an account of his visit to the farm, 'We were not less surprised than pleased to see the frankness, honesty, and true nobleness that the boys exhibited in the moral training, and we hope never to forget some cases of great interest, and lessons we learned of human nature, struggling with their noble acquirements.'

"After the moral examination has been finished sufficient time is given to read books, write letters, or attend to other exercises. The elder brother frequently selects some article or chapter pertaining to the kinds of labor that the class have been employed at, and reads it aloud, explains it, and answers questions that may be asked. The boys are also permitted to read aloud pieces of their own selection; and in this manner the evening is passed away very profitably and pleasantly. At nine o'clock, the hour for retiring, an elder brother leads in family worship. When they retire each boy is earnestly requested to consecrate a few moments to self-reflection and examination, and all are reminded of their duty to pray to God in sincerity. By proper reflection and the instruction he receives the youth is enabled to see his errors and make good resolutions for the ensuing day.

"Nothing but a truly philanthropic zeal manifested in all intercourse with the governed, and exemplified in every attempt to correct the errors and win the hearts of the obstinate, will insure proper success.

"The departure of those who have been honorably discharged has always been an affecting scene. They are escorted a short distance by the school, and all bid an affectionate farewell, during which time there are but few who do not shed tears." (Report of 1858.)

Corporal punishment is not used. When punishment is necessary, solitary confinement or bread-and-water diet or demerit marks are used; while merit marks are given for all good conduct, which have a pecuniary value; and badges are used which mark the moral standing and promotion to a higher class—the highest class indicating that they are fully reformed and prepared for an honorable discharge.

The intellectual education in this school has been very successful, and I believe that the industrial and moral training is the cause of its success. The report of 1871 says:

"Every boy, according to his age and strength, works one half of his time. In our shops—black-smithing, carpentering, chair-

seating, broom-making, tailoring, and shoemaking—at the saw mill, on the farm, in the orchards, vineyards, nurseries, and strawberry-plantations—all of our boys find congenial and useful employment. Our school will compare favorably with the best common-schools in the state. We have no truants; the attendance of each scholar is regular and punctual. The school-room seats and furniture show no defacement; though used for years, they show no marks of being soiled or marked."

Mr. Darling says (report of 1868): "Generally they are hungry and thirsty for instruction, for proper guidance and encouragement." The chaplain's report of 1869 says: "The boys are of a positive nature. When they listen, they listen with intense interest; when the sing, if not in the spirit, they do sing with power." Mr. Darling says:

"In vocal music, too, of which I have charge, the boys have attained wonderful proficiency. All the boys can sing some, and we have a large number of sweet, powerful voices. When all the voices unite in some pleasing chorus the singing will do credit to any church or choir in the state. The rapidity and accuracy with which they learn a new piece, words and tune, are truly astonishing."

The boys also have a Young Men's Christian Association, a literary and debating society, a weekly prayer-meeting, and the institution supplies a library and reading-room.

The boys who leave the institution often write back friendly letters, showing their respectable conduct and their gratitude for being saved by the school. Many of these letters have been published, and they justify the assertions of the report of 1873: "We receive bad boys and see them greatly benefited, idle boys and see them become industrious, vicious and revengeful boys and see them become mild and teachable, profane and obscene-speaking boys soon to find that no evil communications proceed out of their mouths."

I do not believe that this wonderful power of moral education and regeneration can be fully realized without labor to consolidate the character; but for those who have not yet fallen into vice there may be a moral education that will be sufficient to elevate the character, and of this we had ample proof in the school of

Fellenberg at Hofwyl, the most celebrated school in Europe—a school which attracted the attention of every nation; commissioners and ambassadors from different governments made examinations of its working. Russia, Prussia, France, and Switzerland had official reports upon it. The famous Robert Dale Owen was a pupil of that school more than fifty years ago, and in his autobiography, published in the Atlantic Monthly, he gives a very interesting account of it, which is fully sustained by its general reputation and official reports. In that school there was a medley of nations. Germans, Russians, French, English, Dutch, Greeks, Swiss, Prussians, Italians, and others, whom we might have expected would be engaged in constant broils. But it was a school of moral government, in which the students governed themselves so well that Fellenberg had no need to display his authority. The sentiment of honor and fidelity to their own regulations was made the governing power. They were governed by the moral public opinion of the school. As Mr. Owen says, "the nobler sentiments were appealed to, and the response was prompt and ardent." They did not engage in duels, which prevail in all German universities; they had no personal encounters or fisticuff fighting; and what is stranger still, they had no smoking, frolicking, or drinking.* Tobacco was banished *by the action*

* What a contrast is this to the general character of German universities. At Göttingen last May, fifty-eight of the students were found guilty and fined, and two ringleaders sentenced to a year's imprisonment for participating in riots that lasted a week, caused by the burgomaster closing all beer houses and other places of public entertainment at midnight, a restriction so resented by the students that "it is said the university will be partially deserted if the measure is not relaxed."

What a signal contrast, too, to the general character of American schools and colleges in the present century, long after the example of Hofwyl had been published. Quarrels and fights, rowdyism, riots and rebellions have been recurring every year and every month. Ex-President Woolsey of Yale recently said that when he came to that college in 1851, "the students were more disorderly than they had ever been before or since. Among the college officers this time was commonly spoken of as *a reign of terror.* Thirteen hundred panes of glass were broken in a brief period, and there

of the students. If they ever went to a neighboring tavern it was at a proper time, in a gentlemanly way, and with the knowledge of their professors. Moral power and public opinion proved sufficient without reward or punishment. There was no competition for honors, nor medals, nor exhibitions, nor expulsions.

"All this," says Mr. Owen, "sounds, I dare say, strangely utopian and extravagant. It comes before me now, by the light of a life's teaching, and by comparison with the realities of after years, more like a dream of fancy seen under the glamour of optimism than anything sober, actual, and really to be met with in this prosaic world. It avails nothing to tell me that such things cannot be, for at Hofwyl they were. I described a state of society which I saw, and part of which I was."

In that school the scions of European aristocracy and the humblest charity scholars associated together, and no one would know the difference.

Fellenberg's career is now a matter of history; and as history repeats itself, often with improvements, we find that what he demonstrated with children of the respectable classes, Mr. Howe and his worthy associates in Ohio have demonstrated with the graduates of the police court and jail. These examples prove that moral education guided by common sense, even with no scientific and philosophic comprehension of the subject, is competent to lift the vicious into morality and to elevate the moral to a loftier life.

Still more do I claim for moral education philosophically understood and practised. I do believe it is competent to remove all the evils of society, and put an end forever to pauperism and crime, as well as to war and political corruption. Its omnipotence over all classes and races has been well exhibited in the experience of the Hampton Institute of Hampton, Virginia, at which seventeen young men, Indian pris-

were other disturbances which caused the faculty to try thirty or forty of the students in a body on the green." His experiences during this turbulent time in college did much to strengthen his character.

oners of war, were left in 1878, for whose education the residents of St. Augustine had paid. "They represented the worst stock in the Indian Territory—the class that the West declares cannot be educated any more than the buffalo, believing 'there is no good Indian save a dead one.' Yet in a few months eleven of the students, against each of whom there were charges for plunder and murder on file at the War Department, were received into the church connected with the Institute." General Armstrong says that "he never saw a more radical change of life than appeared in these men."

Let us now proceed to the scientific study of moral education, the cardinal principle of which has never been developed, so far as I know, by any author, or fully embodied in the system of any institution, although it has been very considerably used. That cardinal principle is indicated by the fact that each department of our nature has a different channel of approach, a different mode of manifestation, and a different method of culture. The intellect has its channel through the eye and its instrument in the hand. All impressions on the eye give intelligence, and primarily arouse only thought, not feeling or action. When feeling or action is roused it is only by a complex association of ideas, never the primary effect of the perception. The intellectual nature of man is infinitely delicate, rapid, and subtile, and therefore corresponds with the subtilty of light, which has 789,000,000,000,000 undulations per second. But the emotional nature is far slower and less delicate; and is therefore adapted to the slower and grosser undulations of the air. This is the ultimate physical reason for the fact that every impression on the ear is primarily addressed to feeling rather than intelligence. The sense of hearing is closely akin to that of feeling, and both belong to the anterior part of the middle lobe of the brain, which is the emotional lobe, as the front is the intellectual lobe. Thus the anatomy of the brain shows that the sense of hearing is the true emotional sense.

Hence in reading the printed page we merely acquire ideas and cultivate the intellect at the expense of all the other powers; but in listening to the voice of the speaker our feelings also are roused and our force of character kept in a vital condition in sympathy with his emotions. The voice of a friend expresses his character, conveys his feelings and rouses our feelings irresistibly. Eloquence lies in the tones of the voice, and has little to do with the words. The sermons with which Whitefield moved the masses so powerfully, are of little interest in print. If therefore we would excite pure intellect, we must address the eye by books and objects; but if we would cultivate the emotions, we must address the ear. A system of education which does not address the ear may cultivate the intellect, but it produces an abnormal development, leaving the character to degenerate by inactivity of the emotions, and taking away our manhood. The larger portion of intellectual education has heretofore been of this character, and has actually impaired the manhood and the social qualities of the student.

This partial cultivation is abnormal and debilitating, for the strength of intellect depends much upon the strength of the feelings that act with it. Without firmness, energy, hope, and faith the intellect becomes feeble and languid. Emotional culture is therefore necessary even to the proper development of the intellect; for the activity of the whole brain is necessary to the normal activity of each portion.

The fundamental rule of moral education therefore is that it should be oral or vocal. The pupil should be habitually under the influence of the voice of one of a higher moral nature than his own. Oral instruction is therefore indispensable to moral development, while it is by far the most effectual means of intellectual culture.

We come next to a still more important and still more neglected principle. Voices and moral influences are influential as they are nearer to us. In physics power or attraction increases inversely as the

square of the distance. In psychology there is a similar law. But there is no voice so near to us as our own, consequently no voice can exert so much power as our own in moulding our character. The speaker whose deeply pathetic tones bring tears to his hearers' eyes feels in himself far more pathos than they realize. The hero whose courage in battle inspires his followers feels in himself far more courage than he can inspire in them.

Men and all other animals inspire themselves by their own voices. The dog barks himself and the lion roars himself into a fury; the bird sings itself into joy and love; the man by loud and fierce expression works himself up into anger, or by kind and sympathetic expressions melts himself into tears. Hence there is no power in moral education equal to *the voice of the pupil;* every time he utters an expression of anger he strengthens his fiercer passions. Every time he uses the language of politeness, reverence, and friendship he strengthens his moral nature. Hence there is no exercise of greater moral power and benefit than declamation, which is made to express with passionate eloquence the higher emotions. In this lies the power of prayer, when the pupil prays himself with fervor, instead of merely listening to another. Declamation therefore or eloquent reading should be introduced as a prominent exercise, not only for elocutionary purposes, but for moral development, and there should be a systematic set of such exercises for the cultivation of every virtue, and especially of those which the pupil chiefly needs.

But the chief and most beneficent moral exercise is that in which the voice goes forth with all its emotional strength in the expression of feeling by song. True song is a gush of feeling, and is therefore moral education in its purity. The voice in true song expresses every feeling—love, courage, joy, devotion, sympathy, humor, tranquillity, pride, ambition, or the fiercer passions of anger, fear, hate, scorn and despair. There is, no doubt, a miserable kind of empty scientific music, without a soul, which moves no feeling and

has no value. It expresses nothing but the mathematical relations of sound, and is of no interest except to the scientific student; so there is a plenty of wishy-washy literature which has neither eloquence nor profundity, but pleases the lovers of rhetorical verbiage. This rhetorical verbiage in music has no moral value. The real worth of music *lies in its eloquence* or depth of feeling. Song is eloquence united to words, and we do not know the power of verse until it is inspired by the tones of song.

"The exquisite harmony of superior performance," said Pestalozzi, "the studied elegance of the execution may give satisfaction to a connoisseur; but it is the simple music which speaks to the heart. The national melodies which have from time immemorial been resounding in our native valleys are fraught with reminiscences of the brightest parts of our history, and of the most endearing scenes of domestic life. The effect of music in education is not alone to keep alive a national feeling; it goes much deeper. If cultivated in the right spirit, it strikes at the root of every bad or narrow feeling, of every ungenerous or mean propensity, of every emotion unworthy of humanity. Those schools and families in which music has retained its simple and chaste character, have invariably given evidences of moral feeling, and consequently of happiness, which leave no doubt of the intrinsic value of that art."

If these views are just, the school in which song is not a prominent part of its exercises is not a *moral school;* for song is the great moral element. Songs are the highways of angels to human hearts, and when you close these highways and shut out the angels the devils are free to come in their place. I hold therefore that in every moral school there should be from twenty to forty minutes daily given to song, in five or six intervals throughout the day.

The great power of the church to renovate human nature, to take profligate men and lift then as by a whirlwind to a higher life, lies in its songs, its congregational singing. The Methodist Church excels all

others in moving men, because its people sing with a grand fervor; and its ministry carry that fervent spirit into the pulpit in all their exercises. They sing to embody the fervor of their religion, they raise themselves nearer to the gates of heaven, and they carry along with them thousands who came indifferent or scoffing and remained to pray. But no finical or high-wrought complexity of fashionable tunes will answer their purpose. The Methodist song is not decorated like an empty-brained fop, but rushes forth in rude attire and giant strength, as it asks, "Am I a soldier of the cross?" or rejoices in the words "There is a land of pure delight." The last national Methodist Conference held in Louisville expressed its decided feeling in favor of simple, pious, and eloquent songs by the people against the innovations of musical complexity.* It was by the power of song that the poor depraved children from Hamburg were subdued to tears at the Rauhen Haus, and made such remarkable examples of piety and virtue.

It is strange that the wonderful educational power

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* Professor Nixon said to the Western College of Teachers many years ago:

"A tune composed two hundred years ago will appear new to such as never heard it before. But the very fact that it has survived two centuries is an evidence of its essential and imperishable worth. I shall be asked if my veneration for antiquity leads me to suppose that the power of nature to produce composers equal to those who have passed from the world is exhausted; and I answer, No. But I assert that, beginning with *Kirby*, who composed his "Windsor" in the year 1592 (this solemn melody, two hundred and forty years old, I have known to be excluded because it was a new tune), and passing through the oratorios, anthems, and other works of Croft, Handel, Green, Purcell, Arne, Blow, Blake, Haydn, Smith, Mornington, Randel, Taylor, Carey, Leach, Madan, Weyman, Delamain, and other eminent psalmodists, I can cream a richness of melody that I would disdain to taint by a comparison with the productions of any man or confederacy of men upon earth. Sacred melodies, which shall swell to the vaulted roof of every church in Christendom, when the attempts to supplant them by patent-noted and anvil-hammered manufactures, though performed by even a patent application of steam, shall be deservedly forgotten, and when the strains stolen from the Italian opera shall have returned to their home forever."

of song should have been so long neglected, and so entirely excluded from colleges. The Rev. A. D. Mayo says:

"I know not how I should have lived through ten years of the strange experiences and crushing and confusing toils of professional life in a great western city could I not have been almost every day lifted up and cheered by the wonderful singing of the children in the Cincinnati common-schools. For often when everything in that turbid drift of humanity which we call society seemed whirling beyond my power, and I could not see ahead the length of the ship I steered, on passing a school-house a wave of song would come surging out through an open window, hushing the noisy street, arresting the hurrying crowd, as if the gates of the better land had swung half open, and for a moment we heard the dwellers within chanting "Glory to God in the highest, on earth peace, good-will to men." Marry your highest moralities to childhood's music, and Young America may yet sing itself within sight of the millennium in this new world.

"A rigid reform is demanded in the selection of music for our common-schools. A great deal of it is puerile; too much of it is beyond the capacity of children. Some of it can be accounted for only by the perverse desire of the special teacher to exhibit his musical menagerie. We need more songs of home, of country, of simple praise to God and love to man. We need less toil over the science of music and more actual singing that shall knit together the souls of the scholars into a loving community."

If I have demonstrated by the examples of Lancaster, Ohio, of Mettray in France, of the reformatories of England, of the Rauhen Haus at Hamburg, and of Hofwyl, that moral education can regenerate mankind; if I have shown that the chief power of moral education lies in the voice, and that the purest form of this power is in song, I am justified in saying that every school should have its daily exercises in music, and that every teacher should demand them for the benefit of his pupils and for the benefit of himself, that his own soul may be refreshed, and that the burden of the labor of government may be taken from his shoulders by inspiring the school with that lovely spirit in which all duties are performed as pleasures, and the rod is an unknown instrument of government.

Underlying all this practical success is the great scientific law that the emotions are controlled through

the ear; that the ear is the great organ of moral education; that the voice of the pupil is the greatest power for his moral culture, and, in short, that *the human larynx* (so long overlooked) *is the chief agent in moral education*, and therefore the most important agent in normal *intellectual* culture, which largely depends on moral energy. This principle, which, as an outgrowth of anthropology, I presented twenty years ago, is not unfamiliar to enlightened teachers to-day, for I do not see how any teacher can observe and think without arriving at such conclusions himself. The doctrine, however, in reference to voice as the agent of moral education, and the supreme potency of education for virtue as well as for intelligence, may be unfamiliar to-day, but it cannot long remain doubtful with earnest thinkers.

As literature is to the eye and the intellect, so is song to the ear and the soul, and as moral energy is necessary to intellectual growth, the moral power of oral instruction is indispensable to vitalize every school in which knowledge is imparted, and give it a strong, healthy, normal character, and the rapid progress which modern enlightenment and the vast circle of the sciences demand.

That the combination of song and labor with oral and visual instruction, social influences, and hygienic amusements or exercises constitutes a thorough and satisfactory system which I have been accustomed to call a "full-orbed education" is not only clear to the faculty of reason and demonstrated by the success of reformatory schools, but is also most happily demonstrated by the success of kindergartens, in which the appliances of a rational education are utilized to the delight and progress of the children.

If our adolescent education were as wise as that of the kindergartens there would have been no occasion for this volume. Let me emphasize, then, for adolescent education the lesson which kindergarten schools have illustrated.

1. The first demand of ethical education illustrated by the kindergarten is that the *pupil shall be made*

happy. If the teacher has not in his own soul enough of the ethical inspiration to desire to make his pupils happy he is defective in the most essential quality of the teacher—a defect worse than any literary ignorance—and is incapable of inspiring them with proper sentiments. But if he succeeds in making them happy he maintains the steady growth of all their better sentiments, secures their ready compliance with his wishes and makes them eager to attend the school and assist in its progress. The chief agent for this is the voice—the chief method is song.

2. To secure this happiness and progress, there must be *no monotony and no fatigue.* The younger the pupil the more important is this rule, as the capacity for enduring monotonous application increases with age.

3. Visible illustration and oral instruction, being far more pleasant, wholesome and energizing to the mind than reading, should be the chief methods of instruction, and the voice of the teacher should be that of a mature and superior character.

4. The delightful and controlling power of vocal music should be in frequent use to the extent of keeping the higher emotions in continual activity by the voice of the pupil, and they should be still further cultivated by exercises in reading, recitation, and declamation.

5. The natural desire for activity which belongs to all healthy natures should be gratified not only by frequent changes of position, walking, marching, dancing, running, etc., but by doing something useful or artistic, as by drawing and modelling, constructing with tools, or doing any species of useful work which is interesting and gives exercise to the mind.

6. The controlling will of the teacher should be kept in continual operation upon the pupil, by securing his affection and confidence, by unyielding firmness in command, by the power of the voice in control, and by affectionate intercourse and advice.

7. The religious sentiment, as the most elevated, subduing and sanctifying of all human qualities, should

be kept in lively activity by emotional songs, and by familiar expositions of our relations to the *divine and eternal*, and illustrations of all the virtues that ennoble human nature, enforced by the application of those principles to the conduct and manners of the pupils.

If the principles of the foregoing address are true we may infer

1. That the ethical character of a teacher is more important than his intellectual attainments, and that his most important qualification is the power of securing the love, respect, and voluntary obedience of his pupils.

2. That the enforcement of rules of conduct will produce no satisfactory results without the cultivation of the emotions which produce the amiable, docile, and dutiful nature.

3. That the more ethical and spiritual nature of woman gives her especial qualifications for educational work, and requires her presence in all educational institutions.

4. That a marked improvement in the character, deportment, and sentiments of their pupils should be demanded of all institutions of education from the kindergarten to the university.

5. That special schools should be established for the training of all children of vicious parents, and all who manifest their depravity in any form of frequent misconduct.

6. That ADULTS as well as youth should be subjected to reformatory education, and that all sentences to imprisonment should consign the culprit not to a certain amount of confinement, but to *detention in a reformatory until reformed* and fit for society, as the sick and insane are sent to hospitals until cured.

7. That the moral influence of the teacher and the school should be supplemented by the moral influence of the best persons in history brought home to the pupil in vivid biography.

CHAPTER III.

EVOLUTION OF GENIUS.*

ETHICAL AND INTELLECTUAL.

Superior men.—Leadership and rulership.—Development by education.—Love the source of all.—What is genius.—Divine love and wisdom.—Infinite knowledge yet to be attained.—Antagonism of universities to genius.—Stultifying power of schools.—How to make men think.—The Socratic method applied to education.—The shameful record of human stolidity.—Method of Mr. Ellis.—The higher plane of thought.—The psychological basis.—God is love.—Love an inspiration.—Physical science barren.—Incompetence of mere intellect.—Necessity of mental adjustment.—Illustration in pictures.—Love the adjusting power.—Abnormal philosophies.—Character of the philosopher.—Genius, love, hope, and faith.—Conjugal love.—Evolution of genius by moral education and the education of originality.

WHEN a man of superior organization, finer temperament, and more intense vitality addresses us, there is a vividness in his ideas, with a freshness in his language and a force in his expressions, which arouse and interest us. Even when he tells us what we already know he makes it interesting. Now and then he brings out some interesting remark which had not been expressed before, and, feeling that he is expressing our own thoughts better than we could have done it ourselves, we are charmed with him.

Such are the superior men of society, who lead their time, who are the mouthpieces of their generation, and who, embodying in themselves the general sentiment of their countrymen, become their leaders for the time, and are sometimes called great men; for,

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* An address delivered in 1875 at Louisville, Ky.

although not intellectually great, they may have personal greatness and force of character.

Such men are the natural *rulers* of mankind; but, though it may seem paradoxical, they are not the *leaders*. The true leaders are the pioneers, the men who advance beyond their age, who think as future ages think and do as future generations do. Such men are often neither rulers nor leaders in their lives; but being dead, they still speak; their leadership is recognized; and at length all humanity advances to stand in their footsteps, to think their thoughts and to acknowledge their leadership.

Thus LEADERSHIP and RULERSHIP are distinguished. The rulership belongs to talent and force; the leadership belongs to genius and consecration. The rulership of talent in all countries fills their historic annals with the starry names of heroes and statesmen; the leadership of genius is rare, like the advent of the comet, and a century may pass without a single example. Though Copernicus, Kepler, Galileo, and Newton were the clustered leaders of the awakening intellect of Europe, none of them were rulers. Copernicus, prudently, was quiet in life, and published as he died. Kepler, a transcendent genius, was worn out by poverty and disappointment; mankind have not yet done full justice to his memory. Galileo narrowly escaped the fires of the martyrdom which consumed the philosopher Bruno in February, 1600.

I do not propose to discuss the history of genius, but to speak of its genesis or evolution, and must first apologize for speaking of the *evolution* of genius as if it were a manufactured product; for it is an accepted maxim that the poet is born, not made—"*poeta nascitur non fit*"—and so genius generally has been considered an unaccountable divine gift; as Plato, after worrying through his Dialectics to find out something about virtue, gave it up, and concluded that virtue was simply a gift of the gods to their favorites. But nowadays we recognize law in all things, and do not bring in the "*Deus ex machina*" when we know of tangible causes.

I have spoken of the development of virtue not as a miraculous gift, but as something which can be assured by moral education. If that most godlike of qualities—for God is love—can be evolved by moral education, what is there among the noblest attributes of man which may not also be evolved by education?

Love is the divinest element of his nature—that which assimilates his nature to the great infinite fountain of life and lifts him up to heaven. This is not more a religious than a scientific truth; and many a poor wife whose life has been entirely in the shadow of disappointment, poverty, toil, and grief, but who has lived the life of love, toiling for others, will find hereafter that out of that humble, loving life has arisen a higher destiny than that of many of the world's rulers.

Out of this divine element of love springs the grandeur of our future life, and out of that same divine element come all the grace and beauty of human society—the pervading aroma of a good woman's presence, the bright and winning expression of the eyes of beauty, the sacredness of home, the charm of poetry, the brightness of nature, and finally the loftiness, the purity, and the *fruitfulness* of genius.

Love is an educable faculty; and genius, which should be associated with love as the light of the sun is with his warmth, is equally educable; for there is not a convolution in the brain nor a muscle in the body nor a single viscus which may not be cultivated and developed, as every physician and every teacher of gymnastics understands.

But what is genius? That question suggests so many trains of ideas it seems too large a theme for a discourse. Genius is in one sense that amplitude of mind which fills a wider horizon than others know, and brings from an untrodden sphere of thought the conceptions which to ordinary mortals are unknown, wild, and wonderful. Genius is that penetrating power of mind which reaches into the deepest arcana of nature and brings forth the rarest jewels of wisdom.

Genius is the power which reaches out beyond the mechanical habituality of common life to realize a better way in all things: a better mode of agriculture to fill the land with plenty and with beauty; a better style of machinery to lighten human toil and promote human comfort; a better style of government for the happiness of the governed; a better education and literature to elevate the destiny of posterity; a truer conception of man, heaven, and the universe to illuminate and guide our destiny.

Genius is *not* the mere coruscation of language, copiousness of literature, or abstruseness of speculation. The so called genius of Plato and of Hegel was but a mammoth shell with an almost invisible, worm-eaten kernel, scarcely food for a book-worm. The genius of Homer and Virgil was but a luminous flow of eloquent language; the so called genius of Aristotle, Albertus Magnus, the "angelic doctor" Aquinas, the "seraphic doctor" Bonaventura, and the renowned Duns Scotus, whose literature governed the dark ages, was but a flood of muddy water that drowned the intellect and stifled the progress of Europe.

The *literati* have fixed our attention upon verbal expression, the grace of language, and the voluminous abstruseness of utterance which has passed too often for philosophy, and much of what they have hailed as genius is already food for oblivion and the paper-mill.

Genius is not a matter of words; it is a glowing reality, a guiding light. The true man of genius is he who discovers what other men cannot discover, who leads men out of the false into the true, who, if listened to, would guide humanity as its guardian angel.

Cutting short our definitions, we may say that the test of genius is originality; the power to grasp new truths and add to the intellectual wealth of mankind; the power to do what all other men cannot do—a power which necessarily makes its possessor a leader, no matter if he wait a century for followers. Genius is therefore the prophet and apostle of human pro-

gress. It is the divinest possible manifestation of the human soul; and in saying this I do not detract from the divinity of love, for love is a necessary influx into that complex power which we call genius. Without love and hope genius falls prone to earth, and expires in gloom, sensualism, and animality.

Thus do we consider genius the divine love and wisdom embodied in man, and therefore the first requisite for its development is that he should be in sympathy with the divine, and should have a truly godlike model in his mind for imitation. That godlike model he will find when led to its contemplation by a true religion, unclouded by any false and debasing doctrines, and he will learn how to imitate it by the examples of illustrious men who have lived to lead and bless mankind. But before the understanding is expanded to divine contemplation, and before the grand historic examples are studied, there is a nearer and more attractive influx from the divine; it is the lovelight of a mother's eyes. That love is to us the representative, the miniature channel of the divine love which flows into the creation; that love develops the infant soul as the sun develops the buds and flowers of spring; and if that influx continue through youth and through the whole course of education, from other sources as well as the mother, the soul will reach its full stature and take hold of the infinite.

Truth is infinite. The world is full of infinite knowledge unattained, infinite possibilities not yet realized; yet all our knowledge is narrow and inadequate, and the majority of the scientific world are not yet aware that there is *any object of human knowledge but matter and its phenomena.*

We do not yet successfully resist the swift approaches of disease and death; we do not yet control pestilences and epidemics; we do not yet educate men into virtue; we have not yet successfully grappled with the problem of pauperism; we have not yet relieved mankind from cruel despotisms; we have not yet mastered the problems of government and international law so as to put an end to the *infernalism of war.*

Even in physical science and its industrial application, which is our most advanced form of knowledge, we have not yet learned to utilize more than one tenth of the great mechanical power evolved by fire and realized through steam, which is the world's great working power.

Regarding genius as the pioneer, the leader, the redeemer of mankind from barbarism, the immediate organ of the divine love, the problem of the evolution of genius becomes one of transcendent importance. To whom shall we apply for its solution?

All evolution belongs to the period of growth. Evolution in man therefore belongs to the period before birth and the period after it—of youth and adolescence. The period before birth belongs to the mother, the physician, the physiologist; and the mother who does not study some work on the laws of hereditary descent has omitted a very important duty; the period after birth belongs to the educator, and our theme is therefore a very important portion of the science of education.

To speak of the evolution of genius by education would seem like ironical mockery to one whose ideas of education are derived from the historical university which for many dark centuries was as truly the conservator of ignorance as the guardian of knowledge. The universities had no sympathy with Galileo or Newton, but manifested a decided hostility. They had no sympathy with genius, and their whole course of instruction was singularly well adapted to its repression. Genius was stifled and progress stayed so far as their influence could effect it. It was declared by Hobbes (in the first half of the seventeenth century) that no useful science was taught, and no man pretended to know any more than Aristotle taught two thousand years before; that the universities were really devoted to teaching "*Aristotelity.*"

Oliver Goldsmith, a century later, said that in his day, in the old-fashioned universities of Prague, Louvain,* and Padua, they spent their time in talking

* Louvain had in 1570, 8000 pupils.

Latin and maintaining syllogistic disputations after Aristotle, and remarked upon it, "Would not one be apt to imagine this was *the proper education to make a man a fool?*" And it was most eminently successful; for it preserved the reign of ancient ignorance until the sixteenth century, and warred against knowledge two centuries longer. The American university is not yet emancipated from the influence of mediæval systems, for the majority of them still retain in their programme effete and refuted systems of metaphysics.

I do not therefore think that genius can be evolved in education without an entire reversal of the ancient system. That system was to confine the mind to the exercise of memory and to slavish imitation. I have seen that system in American schools deadening not only genius but the entire reasoning capacity, and doing all that is possible to make the pupil a pedantic fool; which might have been partially successful if the pupils had not picked up enough of shrewdness and common sense in the playground and at home to counteract the stupefying tendencies of their education.

I do not mean to imply that schools to-day have the stultifying power which many of them had half a century ago. On the contrary, I believe the majority of our schools have considerable power in quickening and developing intellect. But the intellect which the schools generally develop is not the higher department of the mind. Memory is still the predominant faculty; and if that is well stored with knowledge, the school is considered satisfactory. But it is not satisfactory as a development of mind. With such development alone the human race might go on from age to age but little better or wiser than their past. China does not neglect education or learning; but the Chinese immobility for uncounted centuries is precisely what we do not desire, and there is no escape from that stagnation except by the cultivation of *originality*, which is the evolution of genius.

Our problem then is how to make men think for themselves—think boldly, clearly, grandly and bene-

ficially; think for their own welfare and for the welfare of mankind; think the bright thoughts which have never been thought before, which glitter as new coin from the treasury of heaven; think the thoughts which the age demands, by which great mysteries are illuminated, and the problems of science, government, and sociology resolved.

If you ask how this is to be done, do not smile if I say the way to do it is—*to do it;* for there is no mystery or complication about it. The way to learn to walk is to begin walking, with help at hand. The way to acquire originality is to begin being original, and to continue until originality becomes a second nature. There is no difficulty in starting children or youth in the path of originality. They should never start their education in any other way, unless we wish to make them parrots.

Instead of making the child a passive recipient of knowledge, he should be made, as far as possible, to find out everything for himself. Teachers of natural science have found out the value of this method in their department, and I think Professor Agassiz rather carried it to excess. He would put a young man, without books, alone for a whole week with a fish, that he might find out everything about it for himself. I have been accustomed to deny the indispensable necessity of books, but still I have a better opinion of their availability than Agassiz expressed, and I do not agree with him at all in dispensing with the teacher.

This method of teaching science has not, so far as I know, been adopted by anybody except Mr. Ellis, of London, in teaching political economy; and his results were so remarkable in making boys superior political economists that I can refer proudly to his demonstration.

The principle of the method is that the pupil shall do for himself and depend upon himself in every case in which it is possible. I would have him construct his own arithmetic and his own geometry as far as possible and with as little help as possible, and the function of the teacher should be to stimulate him by

asking questions, and to help him on in those questions which he could not answer, or show him how to find an answer when he is at a loss.

Thus I would begin in arithmetic, when he has learned to count, by counting in concert, looking at the numbers all the while, and learning to judge of their appearance; and my first step would be to ask him to add together 2's with the balls before him, and determine the product. Two and two more make four, and two more make six, etc. Then he should add by 3's, by 4's, by 5's, and so on, as high as necessary, going over it every day, until he could add the largest sums he could recollect with facility, always determining the matter for himself. Then he should, by a trifling variation, commence multiplying; and after growing familiar with multiplication, having worked it all out for himself, I would ask him to make a correct multiplication-table, never helping him except to correct his mistakes, and keep him repeating until he can multiply together any two numbers not exceeding a thousand. In like manner I would carry him through division, simply leading him along by questions, telling him little or nothing; and through subtraction, till he could readily handle mentally numbers of five or six places, or as large numbers as he could recollect. By the same Socratic method of questioning he should be carried through fractions, decimals, proportion, and all the processes of arithmetic, developing the reasons and making the rules for himself, never receiving a rule from his teacher. This method is already to so great an extent adopted in mental arithmetic that I may refer to its success as the best argument for my doctrine.

In like manner I would lead him through geometry, teaching him by suggestive questions to find out every demonstration for himself, as far as possible. This method is peculiarly applicable in the study of physics or natural philosophy. As a specimen of the method I would show how to present the steam engine.

I would not begin by describing it, or by asking

him to read a description which he could not understand. I would make him go to work and invent a steam-engine himself, under the stimulus of questions; thus: Would it not be a lucky thing, my son, if we could find something more powerful than horses, and cheaper also, to do all our hard work? Yes. Do you know anything in nature that is more powerful than horses that could be used? One suggests thunder, another the cataract of Niagara, another a blast of gunpowder, another a swift river. I reply that lightning has been used, but it was found too expensive when made artificially. Gunpowder has been used, but could we afford to use that? Do you know what a pound of gunpowder costs? We agree then that gunpowder is too expensive. We agree also that a cataract of water is a very cheap power, and they have heard of water-mills. But I reply we want to use a power all over the country where there is no strong current of water. What can we use?

If they have never heard of the power of steam, I would perform a little experiment, putting a small kettle on a hot fire, with some water in it and a tight lid. The water whizzes through the spout in steam; I cork the spout firmly, and soon the steam blows off the top and makes a sensation. Then I catechise them till they explain that the fire turned the water into steam, and the steam displayed its expansive powers. I try it again, put a heavy weight on the lid, and have it blown off. Then I say, Measure the lid and tell me how much force or pressure there must have been on each square inch of that lid to throw off this ten-pound weight. We make other experiments. A metallic flask of water has a ten-pound weight on its stopper, and we heat it by a gaslight until the weight is blown off. But in all these cases I make the boys suggest the form of experiment themselves.

I then ask them how we can conduct that steam into some kind of machine and make it work. They soon suggest a cylinder and a piston, and the steam to be let in under the piston, so as to do lifting work. But if you lift the handle of a pump with your piston,

I say, how will you pull it down? They will then propose to close both ends of the cylinder and let in the steam through a pipe at each end alternately. Next they propose to fix a stop-cock on each tube and let in the steam on each side successively. If we have not an apparatus to show it, we draw it on a blackboard as we progress. We have now a cylinder and piston; with scape-valves, and two steam-pipes to supply them, and one boy at each end to let on and let off the steam. They go through the working of it for awhile, until they are familiar with the working and the handling of the valves. I ask them if they could not manage to save the trouble of two boys working the valves by being as smart as the boy who first found a substitute for his own work by making the engine work its own valves. After many suggestions we agree on a plan for valve-rods to be worked by the piston. Then we discover that the engine is rather an irregular rattle-trap, and after a little catechising they propose a fly-wheel to make it steady.

Having thus constructed a high-pressure steam-engine, we go back and see if we cannot improve the boiler so as to make more steam or use less fuel. We catechise again, and the boys soon discover it is necessary to put the fire in a furnace, to make its walls non-conducting—to boil the water in tubes which are safe instead of a big boiler which is dangerous. We discover the barbarism of our present huge exploding and homicidal cylinder boilers. We go through the entire science of boiler-making, inventing sectional boilers, spiral boilers, and tubular boilers, and find out the merits of each; in fact, until we have brought our invention up to the very perfection of the last compound steam-engines.

After a few months' practice in this way the ingenuity of the boys will be developed; they will invent with facility, and require little assistance; all kinds of water-powers, condensing engines, water-pressure engines, water-rams, hot-air engines (low-pressure and high-pressure), gas-engines, water-mills, wind-mills, digging-machines, excavators, ploughs,

rock-crushers, air-blast engines, spinning- and weaving-machines, ice-machines, will be developed in their minds and sketched on the blackboard by their own hands.

After a full course of such practice they will become independent of the teacher, and will learn to do their own catechising. The teacher need only give them the problem, and leave them to catechise themselves into the solution as they had been doing before.

He will propose such problems as these: Here is a steam-engine minutely described in an engineering magazine; look at its details and see if the consumption of fuel can be diminished by any change; or, Here is the plan of a mill such as is now in operation; where could it be improved; or, Here is an enormous water-power running to waste at the falls of the Ohio; look at the situation and see how it might be utilized.

In such education the reasoning and inventive powers have their best possible training, developing an inventive fertility which would advance the arts in our country more in ten years than they usually advance in a century.

What a shameful record of human stolidity it is to see the almost universal ignorance of scientific principles, the destitution of originality, or even the power to appreciate originality when it comes in our poverty and need to lead us like the pillar of fire by night toward the land of plenty! How slow and difficult the toil of Watt to introduce the steam-engine! How cruel the persecution of its early inventors: the Marquis of Worcester impoverished, insulted, and treated as a madman or impostor; Papin abused, impoverished, reviled, and dying so obscure the date and place of his death are unknown! How contemptible the ignorance and incredulity which hovered around Robert Fulton, doubting even after he had sailed to Albany whether he could return to New York! How humiliating the record of that legislative committee of New York which reported that railroads were entirely impracticable, and gave reasons to prove it! How scandalous the fact that in our American Congress the first proposition to aid so very simple an

invention as the magnetic telegraph of Prof. Morse was met by the coarse, vulgar ridicule of Cave Johnson! How sad the experience of Thomas Gray, who gave his whole life to overcoming the aggregate scientific stupidity of Great Britain and introducing railroads, but who when stupidity was vanquished and railroads a success received neither honor nor profit for his noble work! And here upon this soil of Louisville were the footsteps of the pioneer inventor of steamboats, John Fitch, who died in obscurity and melancholy at Bardstown, shortening his life by suicide, as did also Horace Wells, the discoverer of anæsthesia! John Fitch, who actually made a successful steamboat navigate the Delaware at Philadelphia in 1787 from seven to ten miles an hour, and then, having, as he said, endured coarse mockery and insults and as much torment in the enterprise as if he had been torn limb from limb, repeating in his own life exactly the experience of Papin a hundred years before, turning about in grim despair because he could obtain neither sympathy nor co-operation, emigrating to the West, and here wandering along this broad and beautiful river, contemplating in vision, as he said, the fleets of steamboats which were destined to deck that stream, died in obscurity—a man whom the nation should have cherished in life and honored in death. He only hoped that his invention would be appreciated "when I am sleeping under the poplar in the lofty forests of Kentucky."

Ah! when we have an education of the reasoning and creative intellect nations will no longer starve or slay their benefactors; and the men who were sent to be our leaders out of barbarism will no more have to say, as a gifted, inventive American said, "I was born in the slaughter-house of genius, and I have struggled on the block from the hour of my nativity." It is still as true as it has been that, in the language of Mackay,

> "The man is thought a knave or fool,
> Or atheist plotting crime,
> Who for the advancement of his kind
> Is wiser than his time."

Why do mankind thus war upon the originality of genius, which is the sacred channel of divine benevolence, before which we should bow in reverence, and over which we should erect triumphal arches! The bloody conqueror of nations is honored with the tallest and most costly monument in France; but the inventor of the steam-car, Evans—the conqueror of poverty and toil, James Watt, who enriched an empire, and did more to build up than Bonaparte did to destroy—their names are not in all men's mouths. The godlike creative and redeeming genius of such men is neither recognized in life nor even duly honored in death, because the creative and redeeming faculties lie dead and undeveloped by education in mankind.

What would Paganini have been to a nation without music but a poor fiddling, starving vagabond; what would Lord Byron have been to a nation without literature; what would La Place and Newton have been to nations without science? Not half as much as Red Cloud, Spotted Tail, or Captain Jack.

And in like manner what is an original creative genius in a nation in which the creative faculties are neither cultivated nor understood? An exile from its heavenly home, wandering amid solitude. Galileo was but an impostor among the syllogizing professors of Padua; Galvani at a later period was but a "frog's dancing-master." The representative of creative genius is like the apostle of an unknown religion, and lucky if he escape martyrdom; for men do not dwell in the creative sphere of thought, and have no sympathy with its representatives. Mere intellect cannot and does not sustain such men. Without the inspiration of hope and love their labors would instantly cease, to seek a more profitable sphere. For, as Whittier says,

> "Every age on him who strays
> From its broad and beaten ways
> Pours its sevenfold vial.
> Happy he whose inward ear
> Angel comfortings can hear

"O'er the rabble's laughter;
And while hatred's faggots burn
Glimpses through the smoke discern,
Of the good hearafter.

These "angel comfortings" come to him through hope and love, enabling John Fitch to see the fleets of steamboats coming; enabling Froebel when treated as a lunatic or fool to press on to success in establishing the kindergarten; enabling Socrates to see that the perishing of his body by hemlock was the emancipation of his soul.

I have sometimes queried whether there would not be hereafter a higher race of men of more noble development, among whom the messengers of heaven would not be frozen or stoned. But then I saw we need no higher race to put an end to this Deicidal crime. We need only to educate and develop the grand ideal in man. As we might establish schools of music in a nation to which music was almost unknown, so we might establish schools of original genius. Not establishing special schools for that, but making every school a school of originality. It is necessary to teach men independent thinking, original reasoning; something which we do not find in history, which we do not find to-day except in a few advanced minds. Hallam says that man, "speaking of him collectively, has never reasoned for himself, is the puppet of impulses and prejudices, be they for good or for evil."

But some friend may suggest that genius means more than originality in mechanics. Undoubtedly; it means originality in all things; in statesmanship and literature, and, above all, in *philosophy*, which is the masterly conception of the universe of man—his nature and destiny. I have not time now to show how originality in philosophy might be taught. But I can give a parallel illustration in showing how Mr. Ellis did teach political economy to the poor boys of London till he made them philosophers on that subject. Briefly, he made these boys construct their own political economy; and the brilliant result de-

scribed to me by Prof. Leverson is a sufficient demonstration of my entire doctrine.

For example: Mr. Ellis with his boys would take up the common industrial employments and examine their general course, the boys stating what they knew in answer to questions, and the deficit being made up by his own statements. He would say, Men plough and sow, reap and mow, grind and bake to procure bread. Each of these operations would be examined in itself and in connection with others, all great industrial employments being reviewed. The question being asked how men are supported while they are engaged in the work of ploughing, mowing, etc., leads to the perception that the food and clothing procured by previous labor were necessary to sustain them; in other words, capital must co-operate with labor; and the reproductive consumption of the laborer is distinguished from unproductive consumption. The truth was brought out by the catechising process that men by pushing their own interests according to the natural laws of business produce the greatest aggregate wealth, and that all artificial interference with these laws has a disastrous tendency. The whole subject of wages, supply, and demand was so thoroughly developed that Prof. Leverson expressed the opinion that if this instruction were common, there would never be another strike for wages from the clear perception by all of the impolicy of such violent measures. I have the testimony of Prof. Leverson that few members of parliament even were better instructed in political economy than these poor boys taught by the catechetic system, which compels reasoning and originality.

My intelligent friends will readily concede that by compelling youth to be original, as you compel boys to swim by throwing them in deep water and taking care they do not drown, we may teach them how to invent, how to discover, how to solve practical and philosophical problems, how to take hold of every difficult question in a practical and philosophic way, and how to attain results which astonish the conser-

vative people who are governed by habit and led by fashion or public opinion—who have perhaps graduated with honor under the great Professor Humdrum, who kept them in subjection by the dignified order, "None of that; give us your answer *in the words of the learned author.*"

But, says one, your method will doubtless develop common sense, shrewdness, ingenuity, and independence of mind; but *genius* is something above and beyond all that—a promethean spark which will not flow through any such galvanic battery as you propose; it must come in a flash from above.

There is a flash of truth in that remark, and nothing more. There are moments of the inspiration of genius in which, I believe, the fortunate man rises to a higher heaven of wisdom and breathes a diviner air than he knows in his daily life. But this never comes to him who lives in the lowlands of mechanical habituality, but only to him who lives on a higher tableland, where the lightning sometimes flashes on his own level, and where he ever greets the first rosy light of morning, while the valley lies in darkness and mist. In other words, it is the man of pure and lofty thought, ever ready to welcome the first faint auroral gleam of a dawning unknown truth, who is in a position to invite that inspiration which is like the faint daybreak of a greater and diviner illumination.

The ultimate purpose of this *original system* of education is to lift as many as possible to this higher plane of thought, believing that many who have learned to aspire and climb by their own strength will take "Excelsior" for their motto. But it would be a very imperfect statement of the *original system* of education if I left it here to be considered merely as a rugged and laborious system of self-reliant originality designed for triumph in the toils and problems of life. In the higher department of education in which we teach *philosophy*, the laws, the nature, the methods, and the genesis of genius should be made known and brought into practice.

In discussing this subject we necessarily enter the

sphere of those profound and subtile principles of psychology which belong to that unfolding science of man to which my life has been devoted; principles which cannot be presented now, because one is so interlinked with another and so connected with experimental facts not yet published that I should but leave the subject in confusion if I should attempt to present briefly the psychological basis of educational philosophy. But holding that truth rightly understood is not mysterious, though it may be vast and complex, and having no *mysterious* principles to present, I would briefly state *some* of the more obvious features of the system of evolution of genius beyond mere originality without pretending even to *sketch* the entire system. Out of the ten leading principles I would select *one.*

In the first place, *God is love.* You may call that theology, but I beg leave also to call it philosophy—and a very pregnant principle in philosophy.

For *love is the creative energy,* without which nothing is. This universe is its expression, and we are amongst its brightest expressions. Our lives are but a stream of embodied love. They are the product of that love which budded and blossomed thirty, forty, fifty, or sixty years ago, and the record of which is to be found on many a mossy tombstone. That which is not born of love is not born at all; it is only some hideous cataclysm or precipitant ruin; for evil or hate is not creative, but destructive only. Therefore, if we would have the truly creative genius, it must be inspired by the truly creative element. If we would have intellect in its loftiest form, it must be lifted by the inspiring and aspiring element to its highest sphere. The solid intellect of physical science has in itself no aspiration, no capacity to rise above the dead forms of matter. It is grand and powerful in its own sphere; but its sphere is to crawl on the earth, like the colossal dinotherium or the mighty iguanodon of prehistoric ages. A mind rigidly confined to the spirit and modes of physical science is utterly incompetent to *philosophy* and barren of creative power, as we see

in the modern speculations of Spencer, Buchner, Schopenhauer, and Lewes.

Physical science, seeking to know what *is* in material existence, and learning, merely seeking to know what has been, are void of productive tendencies except as the basis from which to project the future. It is the reasoning power that projects the future and gives the capacity, when properly guided and impelled, to produce anything better than the imperfect past. But in projecting the future it depends upon our psychic forces whether we project it upward or downward. Hope sees all things aspiring and the divine love lifting all up; despair sees all toppling to ruin and a legion of devils busy in destruction. Unless we see the good in the future we cannot work for its evolution; in fact we know nothing of it, and all our labors are barren of good as those of the despondent physician who gives up his patient as hopelessly moribund.

Intelligence draws and paints the future; but if in our grand magazine of sentiment there are no bright colors, we necessarily paint it dark and thus libel both God and man. For all the good in the future that we can perceive, for all the good that we can create, we are indebted to that transcendent element of humanity which portrays the good and bright in the future and reveals the exalted possibilities dormant in the present.* That element which in conjunction with reason reveals the good and guides us to it is a transcendent element in which the virtues cluster together —the virtues of faith, love, and hope. The aggregate virtue is expressed by no word in our language, though it may be partially represented by the word glory.

I wish you to see without a labored demonstration, to see as I do, that God is love; and that everything

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* "The affirmative of affirmatives is love. As much love, so much perception. As caloric to matter, so is love to mind; so it enlarges and so empowers it. Good-will makes insight."—*Emerson on Success.*

good and godlike any where is also lovely and inspired by love. But when that divine element is absent, when there is nothing lovely, hopeful, or glorious, there is no creative power and none of the rich blessings which flow from divine wisdom.

Perhaps some hard-headed and profound philosopher will pronounce all this an illusion; will say *pure* reason is the power that discovers truth: reason alone is the arbiter, and all you say of love and hope is but the illusion of sentiment, which inevitably misleads us.

I reply to such a philosopher, you do not know the elementary principles of psychology; you understand human nature as little as Plato, Kant, and Hobbes. *Pure* reason is but a mathematical draughtsman, and has no coloring for its landscapes. It has no appreciation for good or evil, beauty or deformity, justice or injustice. What is the loveliest young lady, even if a perfect Venus, to a pure reasoner who has no other faculties—who knows nothing of beauty or love? She is simply one hundred and ten pounds of oxygen, hydrogen, nitrogen, carbon, calcium, and a few minor elements combined in organic forms of bioplasm, and organized in cells capable of locomotion, secretion, sensation, mastication, and cogitation; or, as Spencer would say, she is a functional product of the reaction between the bioplasm and the environment.

That is the hard, mechanical conception of the pure reasoner. The "love and hope and beauty's bloom" of the poet are to the pure reasoner merely waves of molecular agitation in the centric nervous ganglia, and the motion of red corpuscles invited by vascular erethism of cutaneous capillaries. The little infant in the cradle of the Washington mansion in Virginia was to a pure reasoner merely a progressively organizing mass of ten pounds of unfinished bioplasm, but to the loving genius of the mother it was the germinal hero and statesman that led the armies of the young republic to a glorious independence.

Pure reason is blind as a bat in the study of char-

acter until inspired by sentiment: and women, though seldom pure reasoners, are so richly endowed with sentiment as generally to be quick and correct judges of character.

Pure, unfeeling reason, isolated from its nobler allies, has no power to discern in the germinal present the blossoming glory of the future. Without the sentiment of love no man can know the worth and nobility of woman; without the sentiment of reverence he can have no proper conception of the Deity. Pure reason only traces out a formless necessity or a pantheistic abstraction. So without the parental love he cannot appreciate the merits of a child, and without the deep philosophic love, or love of philosophy, which is the love of all truth, he cannot appreciate, understand, love, cherish, and protect those infant truths, those fresh-born sciences, which the vulgar herd would freeze or starve or exterminate, but which the loving philosopher cherishes, nourishes, and defends at the sacrifice of fame, social honor, and life itself, that the germinal truth may rise in grandeur to bless posterity. We live in the rich enjoyment of many a truth, many an invention, many a social right and privilege developed by a martyr devotion equal to that of the mother who faints and dies in toiling for her offspring.

The glorious truths of American liberty came not from pure, cold reason, but from the warm hearts of our patriot forefathers. The principles of religious liberty have been won for us by men who would give their lives, and the truths of religion have sprung from the ground enriched by the best blood of the race.

It is brave, generous and loving toil which develops all that is good. It is the generous, loving, philanthropic soul which sees the vast beneficent tendency of all great truths, which never asks the stupid question of *cui bono*, or what is the use of it; but quickly perceiving the much-loved features of truth, as the mother would perceive those of her child, rushes to its side to cherish and defend it. It is obvious enough

that the generous, noble, loving emotions make us seek, espouse, and defend the truth; but it is equally true that they enable us to discover the truth, and that love is the essential inspiration of wisdom.

We perceive and comprehend nothing unless the mind is in harmony with the conception desired. If I look steadfastly at my finger thus, the eye and the mind are adjusted to the conception of an object at the distance of ten inches, and they cannot recognize

"IF YOU LOOK AT THE DARK FIGURES, . . . YOU WILL SEE NOTHING ELSE."

anything at the end of the hall; or if I look at the end of the hall, I do not see my fingers, or I see them in a dim and contradictory way, each finger seeming to be in two different positions. Hence to perceive anything the mind must be adjusted to that perception. So if you look at the dark figures, the fowls, in this picture, which appear to be looking out for an enemy, you will see nothing else. I showed it to a very intellectual friend, and he could see nothing but the fowls, although I assured him there was a fox among them.

Yet after the mind was adjusted to the conception of the fox he could not help seeing it. So when I exhibited this picture of a skull, an emblem of death, it was not until the mind was adjusted to a different conception that it was perceived to be merely an arch which opened to view a totally different scene; and instead of death and decay it embodied youth and

hope. Thus it is that the materialistic superficial student of life sees death alone, and the vast globe seems but the cemetery of extinct races; but when we look into the scene with the far-reaching vision of loving genius we see that death is only a formal illusion. and that beyond that illusion is the heaven of eternal truth.

But we do not see this without the proper mental

adjustment—the far-reaching vision. The adjusting power which gives us the beatific vision is love, using that word as the representative of our celestial nature; the telescope of intelligence swings in the frame of emotion and passion which lifts its range to the supernal heights of divine truth, or sinks it down to gloom, bestiality, rage, and sensuality, or, sinking it still lower, plunges it in the grave of insanity.

The spectator who looked at a jury and supposed them to be the group of robbers on trial easily saw a villainous look in all of them, for he was looking at them in the spirit of vindictive hostility, unrestrained by any kind sentiment, and therefore his conclusion was false and devilish. And so are the conclusions of all who look at nature and the universe without being themselves in harmony with the divine spirit and love from which all nature came.

To appreciate a picture your mind must be in harmony with the conceptions of the painter when he painted it. The cannibal savage who looks at a fine picture of a lovely woman and exclaims, "Humph! fat young squaw! good meat!" has no more understanding of that picture than the "pure reasoning" philosophizer has of the universe when he looks at a world all full of wise and exquisite adaptations, all full of budding life, of developed beauty, of ascending progress, and a towering destiny for man that pinnacles its height in the boundless heaven, shrouded from common vision lest it should make earth seem too dull by contrast, and looking at all this with eyes that scarcely pierce beyond the tobacco-smoke and beer around him, entirely unconscious of all that is above him, inspired only by the dim darkness in his own soul, speaks of this world as one vast godless, dreary scene of inflexible fate and pitiless law, in which nothing is perceived but miserable forms of animal life, hopeless and suffering, and quickly rotting back in the foul earth to reproduce similar worthless and miserable beings; a world in which the highest bliss is not to be born, or being born to die a quick and easy death. Such a conception, which in

Germany is by some called philosophy, is the natural outcome of that long series of morbid speculations which from the time of Plato and Aristotle has afflicted the mind of Europe, and led it into a sleep of centuries like the phantoms that led Rip Van Winkle into the cave of his long rheumatic slumbers.

These false and morbid views of philosophy—the best of which are but cobwebs that can exist only in the closet—are entitled to be examined and swept out of the entire area of literature, for they are not the offspring of normal human intelligence, but of intensely abnormal thought, as I think I have shown in my review, "Philosophy and the Philosophers."

No philosophy is normal in which the bright companionship of the celestial sentiments is not admitted, for no one can rightly conceive the plan and operations of nature without placing his own mind in harmony with the divine impulse, from which all nature sprung into being.

This is pre-eminently true in reference to the masterpiece of creation, the constitution of man, which will continue to be a mystery, as it is to-day confessedly in all the universities, until man shall be studied in the normal method. Not only is the philosophy of man confessedly unknown to-day, but the leading systems of modern speculation are intensely and perniciously false. The mechanical man conceived by Spencer and Huxley differs more from the man of divine creation than a waxen imitation differs from the fragrant, blooming, and self-perpetuating rose of the garden.

And dreary systems of false philosophy must still be produced while through ignorance of right principles men continue their abnormal thinking. The mind of man in its full-orbed development is in entire harmony with the plan of creation, and spontaneously evolves the truth, but when debased or deformed it necessarily distorts the truth and evolves falsehood.

Philosophizing heretofore has been, if not by deformed minds, often by minds that voluntarily deformed themselves, and laid aside their noblest

powers to reason out creation as a problem in mechanics. When by purblind speculation Hobbes and Mandeville decided that we had no moral faculties at all; when Condillac decided that we had none but perception and association; when Descartes and Malebranche decided that animals had no thoughts or feelings, but were as much machines as a mill or a wheelbarrow (and Prof. Huxley attempts to revive a similar notion),—we see the folly of abnormal speculation by men who suppress some of the most important faculties of common sense. St. Paul was very right in his day in warning against vain philosophies; and he could find as many even to-day.

All our powers, and especially our higher powers, in their completeness are necessary to correct conceptions of man and the universe; and he who omits the large portion of the circle which belongs to our celestial nature will fare about as well as if he should look through a telescope with the lenses cut down to a semi-circle.

In the full circle of the human soul, that part which can least be spared, that part most essential to the bright pictures of genius, is the very portion against which the pruning knife of the stupid pedant or of the dogmatic scientist is most often directed, and which, if it should escape their fatal handling, is often killed by the clubs and stones of the senseless mob.

I do not mean mere imagination, though that is very near it, but that high comprehensive and creative imagination of genius which intuitively perceives the divine plan, and is therefore in entire harmony with it, and is never astonished or surprised at anything, because it dimly anticipates or divines all truths before they are revealed to mankind. The character of the true philosopher, according to Herschel, was that he should "hope all things not impossible and believe all things not unreasonable." So hoping and believing, he is ever anticipating something which when it comes delights him, but astonishes and confounds all other men, and perhaps excites their denial and hostility. There never was a true genius, a true

philosopher, who did not believe and know much that his contemporaries considered false and visionary, and any one may easily test his own claims to the possession of genius or philosophy by the simple question, Have I ever believed anything important in advance of society which has since been demonstrated true, or have I always denied its truth and opposed its reception until others forced it upon me?

I believe the original system of education will bring all men in time to the principle and duty of welcoming and actively assisting progress, and when that comes such will be the rapid and enormous advancement of human thought that there will be mountains of old books to pile away in the catacombs of extinct literature; certainly all things not touched by the promethean fire of genius. Finally, the practical conclusion from all this is that genius, by the very law of its being, is consecrated to the service of good, to the progress of humanity, and can exist upon no other terms, for when it leaves its higher path it ceases to be genius. Another important conclusion is that for the sake of genius, for the sake of philosophy, it is essential that man should *love and hope.*

Hence I infer that the woman who wins the deepest love of a man and makes the world seem brighter when she is near confers upon him the greatest blessing she can give, and the nation blessed with such women is destined to pre-eminence. The sight of female beauty on Fourth Street is something more significant than a gallery of pleasing pictures. It expresses the wealth of soul and the angelic influx of an elevating power. That loveliness which is a blessing in life does not cease to bless when its material elements are decomposed, for from its home above it is a sanctifying memory ever calling us to come up higher. There is no holier church among us than Cave Hill Cemetery, no sweeter contemplation than that of the flowers that have been transplanted to heaven.

It is in that direction genius finds its home; and the man who attempts to develop genius without love,

hope, and faith, without originality, or without departing from the beaten track is violating the order of nature, and his genius will be but a barren fig-tree. We have signal examples of all this through history from the dawn of civilization; and especially in some who were credited with wonderful genius—the old bachelor philosophers, or, as Lord Bacon would say, "Philosophasters"—Plato, Descartes, Spinoza, Leibnitz, Kant, and Hume, all old bachelors. Leibnitz when he had an opportunity of matrimony reconsidered the matter, and decided that, although matrimony was a good thing, a philosopher ought to deliberate and hesitate over it as long as he lived, and so he died in his doubts, faithless and wifeless. The philosophies of many old bachelors were distinguished by their dreary dryness and singular absence of common sense. The great question which agitated their solitary souls was whether the world exists or not, whether all we see of this great globe and the immense solar system and stars is a reality or only a dream. It is sad to reflect upon the deeds of that mighty confraternity of bachelors who have so long overshadowed and darkened European civilization by their warfare against science and religious sincerity, their dungeons, inquisitions and wars. We breathe freer now that their power is forever broken.

On the other hand, all history glitters with the names of men, from Pericles and Anthony to Abelard and Goethe, to whom love has been the charm of life and the inspiration of genius. Of the greatest geologist of England, who has just passed away, Sir Charles Lyell, it was said, "Like Mill and Grote, he found his best assistant and inspiration in a gifted wife, who passed away two years ago, and at whose death he remarked that he should follow her in a couple of years."

The kind of genius which a good woman may inspire was visible in the noble head and face of Lyell and in his devotion to truth. Dean Stanley said, "He followed truth with a sanctified zeal, a childlike humility. For discovering, confirming, rectifying his

conclusions there was no journey he would not undertake. From early youth to extreme old age it was to him a religious duty fearlessly to correct all his own mistakes, and he was always ready to receive from others and reproduce that which he had not in himself. In his mind science and religion were indivisible." Though free, heterodox, and revolutionary in his opinions, orthodoxy admired and the queen honored him.

In all private histories we find the same moral. Every man and every woman to whom nature has been kind can remember the gleam of a dawning inspiration when the roses and zephyrs of a moonlight night in June were matched with the fragrance and brightness of a human soul. Who is so poor and lonely in spirit as not to have been at some time thus inspired, and felt the moving elements of poetry within, seen all nature in a lovelier light, and cast a hopeful glance far down the vista of futurity, lined with bright "castles in Spain."

> "Though other lights may shine
> On life's calm stream,
> There's nothing half so sweet in life
> As love's young dream."

So it was in the dawn of modern literature in the twelfth and thirteenth centuries, when every year produced a new poet. Love was the inspiration, the universal theme, and the songs of Abelard to Eloise were heard in every house. The grace of literature and the refinement of chivalry had the same inspiration. The knight was loyal to his God and loyal to his lady-love in the same heroic spirit.

Thus we see though physical science and religion, which lie a whole hemisphere apart, have sometimes seemed antagonistic they are intermediately connected; for science blends with philosophy; and philosophy blends with poetry and religion in a perfect whole, susceptible of systematic statement.

Love is the uniting element of coincidence for all, for it is equally the substance of religion, the inspira-

tion of poetry, and the inspiration of true and *fertile* philosophy. The pursuit of truth, modestly concealed as she is in the privacy of nature, is a lover's pursuit, in which "faint heart never won," and only an overpowering passion is a guarantee of success in the attainment of philosophy and propagation of reform. The greatest educational reform the world has seen was that of the poor school-master Pestalozzi, and he said of his great work, "All this was done *by love which possesses divine power*, if we are only true to the right and not afraid to carry the cross." When the Prussian Government sent twelve young men to Yverdon to study and learn the system of Pestalozzi, the Minister of Education said to them, "The object in sending you to Pestalozzi is not merely that you may study the external or formal part of this system, or to acquire skill in teaching, but that you may warm yourselves at the sacred fire which is glowing in the bosom of that man, *who is full of power and love*, that you may walk with a similar spirit in the path of truth, and in the observation of the laws of nature."

Let me now be distinctly understood. The evolution of genius depends upon two powers—*originality* and *sentiment*. Originality should be developed by the *Original System of Education;* sentiment should be developed by the process of *Moral Education* heretofore explained.

The central power of genius is a faculty difficult to name—a combination of *Phronesis*, *Euphrosyne*, and *Eusebia*—for it is a principle of the new psychology that the highest inspiration is to be found in the highest reverence. It is difficult to name in English, unless we are content simply to call it genius. It is a faculty full of sentiment, full of originality and fancy, full of the intelligent conception of infinite possibilities, and prompt to recognize wonderful things as they appear, or to frame grand hypotheses of a nature so entirely in harmony with all of creation as to be readily recognized by the deepest thinkers. The movement of genius is not merely by a sudden leap, but by sustained upward and onward progress, im-

pelled by a lofty purpose and a delight in approaching the divine.

The superior intellect of Erasmus was not competent to the lofty career of Luther, for *intellect alone* has no high purpose, no sustaining and impelling power, no proper appreciation of the grand, the lovely, the good, or the divine. All these belong to the emotional nature, and the evolution of genius must therefore be found in the two forms of education heretofore neglected—MORAL EDUCATION, which expands the soul, and ORIGINAL EDUCATION, which plumes its wings for the highest and farthest flights.

CHAPTER IV.

ETHICAL CULTURE.

The channels through which the mind is impressed—vision, audition, and feeling.—Their locations in the brain.—The discovery of their locations.—Their relative importance.—The seat of animal impulse.—Its control by development.—Power of mental impressions through the eye.—PERSONAL INFLUENCES—maternal, social, sexual.—Mutual influence of the sexes.—Necessity of co-education.—Treatment of convicts.—SELF-GOVERNMENT—it should pervade all education.—How to apply it.—Examples of University of Virginia and Illinois State University.—Willing obedience.—Corporal punishment.—CONSCIENCE WORK—essential in moral culture.—ETHICAL STUDIES—intellect the guide of moral sentiment.—Self-study and self-correction.—HEALTH—importance of physiological duties.—Disease can be avoided.—No escape from penalties of violated laws.—Red blood the basis of health.—Medical knowledge necessary to every teacher.—Every student should improve in health.—The chief basis of health is ethical or spiritual.—Falsehood of the fashionable.—Materialistic views of life taught in colleges.—Vitality which is spiritual governs and holds together the body and survives its destruction.—The decline of the body resisted by strengthening the soul.—The life of duty is the life of health.—A godlike life brings godlike health.

THE moral power of sound, conveying emotion, character, and intelligence, is the greatest of all educational powers ; but does not occupy the whole of the educational channels.

We have two great channels, perception and sensation ; one for thought the other for feeling, emotion, and impulse—that is, through the perceptive channel, the eye, we obtain ideas ; through sensitive, nervous system we receive impressions which rouse emotion and impulse.

If this division were simple, absolute, and complete, we should simply say educate intelligence through the eye, and educate character through the sensitive channels of which the ear is the most available. This

would be the dogmatic statement if we should follow the usual example of doctrinaires who have a theory to enforce.

But nature has no such simply, sharply, and hardly defined arrangements to correspond to the meagreness of our conceptions; and while I would urge the importance of emotional, moral education through the sounds and physical feelings, which operate directly on the emotions with irresistible power, I cannot, as a true anthropologist, overlook the fact that there are other influential, though less urgent and potent agencies than sound. The overmastering potency of sound comes from the fact that it is intermediate between perception and sensation, and is competent to move both thought and feeling in conjunction.

The sensitive system occupies the anterior basis of the middle lobe of the brain, where it was discovered by myself in 1838 by comparison of the development of sensitive and insensitive persons, and was subsequently demonstrated by many experiments on the living, in which the excitation of the basis of the middle lobe developed abnormally great sensibility on the opposite side of the body. I need not now exercise any prudential reserve in mentioning this discovery in an educational work (which should avoid disputed theories in biology), since Prof. Ferrier's decisive experiment on the monkey has given absolute demonstration of what I discovered and taught forty-four years ago, with fulness of detail and illustration, while the experiment on the monkey brain only confirms the essential proposition showing that sensibility must depend on that part of the brain in which I located it, since its destruction on one side paralyzes sensibility on the opposite side.

In the subdivision of general sensibility I find that the most anterior part of the organ, adjacent to the location of language (as determined by my experiments and by innumerable pathological facts), is the seat of the sense of hearing, which is closely connected with language and music, and is as closely associated in the cerebral organs. Audition (which is both sensation

and perception) is thus brought forward into close proximity to the organs of visual perception which lie along the brow, resting on the superorbital plate of bone which forms the vault of the sockets of the eye.

Thus, while the sense of hearing rouses every sensitive fibre in the body by its association with the central apparatus of feeling, and by its connection with the medulla oblongata (through the auditory nerve), which is the central union of cerebral and corporeal apparatus, as well as by its close connection with the corpora striata, it also reaches through the adjacent organ of language, the whole intellectual apparatus of the front lobe, and controls the soul by the capture of all its channels of communication, as when in a song the words that occupy the intellect co-operate with the tones that move the emotions.

The auditory region is therefore the commanding centre of conscious life for education, from which we go forward in the brain to the region of pure thought, isolated from feeling, impulse, desire, and power, which occupies the front lobe or forehead (the dome of thought), and go backward in the middle lobe through feeling into appetite, passion, and animal impulse. Anteriorly all is passionless and lucid; posteriorly we find feeling (pleasure and pain), irritability, passion, and blind impulse. Thus physical feeling, posterior in the brain to audition, gives very little intelligence, but rouses every emotion and passion. A blow or any species of physical torture rouses the wildest rage, while the caress of love, the soothing zephyrs, voluptuous warmth, and refreshing clothing produce delight and good humor, tranquillity, and love. The feeling connected with appetite responding to the stomach is equally potent, as we see in the fierceness of hunger, the moroseness of dyspepsia, and the good humor of the festal board and the succeeding hour of comfortable repletion.

Going still farther back in the brain to the basis of the cerebrum, the cerebellum, medulla oblongata, and cerebral crura, we find no intellect whatever, and no channel of perception, but simply muscular impulses.

Consequently this region is not available for any species of moral or intellectual instruction, though it is involved in education. The proper cultivation of this region gives physical power and development, but its excessive indulgence develops the animal at the expense of the moral and intellectual. Moral culture consists not in *suppressing* any of the animal energies of physical life, which has been the unfortunate error of religious fanatics in all ages, alike in Christian, Brahman, and Buddhist fanaticism; but in the development of the higher moral and religious nature, which should stand upon a broad physical foundation to be efficient, and not upon the cramped, feeble and morbid foundation which fanaticism regards as its *beau ideal* when it makes war upon a portion of the divine plan of humanity. A liberal education relies on *development*, where the old system relies on *repression*—repressing the animal nature by animal violence—as harshness—which leaves it bruised, bleeding, and rebellious, to come forth in greater violence when repression has ceased. Nothing but strong, positive moral development can ever control the lower elements of character.

Returning to the intellectual faculties, we perceive that although they do not move the emotional nature, pure thought being the minimum of passiveness, they are the channels for ideas which may be effective in moulding the character.

The immense power of *social influences* comes as much through visual perception as through hearing. There is in the human mind a direct instantaneous perception of character and emotion in others through the eye as well as the ear. Through the eye we realize a courage which we must respect or fear, and a force of character expressed through the eye to which feebler natures must yield. Through the eye we realize the admirable attractiveness and loveliness of a woman before she has spoken, or the disgusting offensiveness of a profligate drunkard, or the sinister motives and impulses of a well-bred gentleman. This immediate psychometric perception brings to bear

upon us the moral force of a superior nature as definitely if not as forcibly as the voice, and in the remarks addressed to us the intellect brings us a strong impression as well as the tones of the voice. Hence a large portion of our moral education is to be effected through the optic-intellectual as well as the aural emotional channel. This joint action is required in the moral education of *social influences*, *conscience training*, *ethical studies*, and high holy *development* by spiritual power, combined with hygienic science and practice. Conspicuously important, though neglected in ethical training, are the

SOCIAL INFLUENCES.

Education demands those surroundings which are established by the wise order of nature, and which ought not to be removed or thwarted by the artificial schemes of men—the surroundings of, 1st, maternal love; 2d, the family circle; and 3d, the circle of adolescence, in which the sexes become especially important and influential to each other.

The infant needs the mother, the boy the family circle, and the adolescents the society of their own ages. It is a lamentable loss, when either of these necessary relations is disturbed. The infant pines and often dies for the want of maternal love, vitality and sympathy. The boy has an uncouth and morbid development without the family circle, and the young man or woman deprived of adolescent society grows up without symmetry in the moral nature.

The co-education of the sexes is an essential part of any complete scheme of moral education. Their separation is but a legacy of barbarism, due to the same spirit which imprisons woman in the harem or forbids her to be seen with an uncovered face. The barbarism (born of sensuality and pessimism) which regards the sexes as mutually dangerous and demoralizing, delights in pragmatic interference with the course of nature, and repression of natural impulses, which break out with volcanic irregularity when repressed.

Man is essentially a social being; but the social at-

traction between the sexes is tenfold stronger than any other attraction that holds society together in peace. That attraction, when it culminates in individual love, dominates over the whole course of life, and develops the courtesies, loves, and duties which make the family sacred. Until thus concentrated in a home, it spreads all through the society of the young, forming an atmosphere of courtesy, reverence, tenderness, sympathy, admiration and love, in which all the virtues bloom as in the first flowering of summer.

That is the brightest, sunniest portion of every life when sexual graces and attractions are first completely realized. It is the period of romance and poetry, of hope and imaginative heroism, in which pure ideals and lofty aims or purposes in life are cherished.

In the decade from 14 to 24, and sometimes several years earlier, the sexes have for each other a potency and a spell for which there is no substitution, to interfere with which is an outrage on nature. As well might we disrupt all families, compelling husbands and wives to live far apart, as to disrupt the potential families of the young, whose love is only the more diffusive and beneficent because not yet crystallized in family ties. In its nebulous state it is as full of diffusive light and warmth as in its later forms.

One of the most efficient means for the demoralization of society is to break up this Eden, separate the sexes, and send the young men to their rudely masculine associations, where turbulence, swearing, smoking, drinking, tussling, gaming and fighting are unchecked by any womanly, parental or professorial presence. The turbulence and demoralization of college life when not under the professor's eyes, checked only by the stock of virtue which the young men have brought from home, would be shocking if it were introduced by a new system of education, but old evils are accepted as inevitable (like the filthy streets of some old cities) and cease to be offensive because so familiar.*

* Harvard students have repeatedly been engaged in rows in Boston. The New Haven *Palladium* last year published an ac-

The sexes mutually ennoble each other by stimulating that desire to please which represses all the evil passions, and this happy influence is so well displayed in the schools and colleges of co-education as to have settled the question as to its beneficent influence.*

"Many competent judges (says the Westminster *Review*) are of opinion that the low tone of morality which unfortunately prevails among us is largely due to this unnatural custom of the entire separation of the sexes in school and university life."

The convict in the penitentiary, as if society were determined on the destruction of his soul, is deprived of all these good influences. No kindness, no love, no sympathy, no companionship, nothing but enforced labor relieves his doom, and it is no wonder that he renews his crime when discharged, if he does not break down while confined. Nine convicts on one day, in April, 1881, were taken from the Massachusetts State prison to the Worcester Insane Asylum. How different will be the fate of our fallen brothers when we endeavor to save and heal them by the Divine panacea of love.

One of the most desperate convicts in a Detroit prison, who had made repeated efforts to lead a rebellion, is said to have been entirely reformed and softened by a little incident that stirred his affections. A little girl among a visiting party asked him to help her up

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count of "a disgraceful fight, in which the students came off second best," which originated in a student's refusal to take off his hat when requested by a manager at a public dancing hall. Yet Yale is a Christian university.

*Thomas Hughes, of England, in an address at Strathmore College said of co-education: "I cannot help feeling that in the future, the chief education lies in this joint education. There has been one small experiment in our country by some ladies—Misses Lushington—and upon young men and boys the joint education has had a most humanizing effect. The boys were wonderfully more humane and gentle than they were at the ordinary schools of the country."

At a recent international educational congress, at Brussels, there was a remarkable and general concurrence of sentiment in favor of co-education.

stairs, promising a kiss in return, and afterwards asked him to kiss her too. He blushed and kissed her, and returned to his work with a tear in his eye and tenderness in his soul, and gave no more trouble to the authorities.

A similar tale is told by the Meadville, Pa., *Reporter*. A young man with marks of dissipation in his face came begging for food at a city mansion, and received it in the kitchen. The lady's child followed her to the kitchen, and as the tramp saw her coming in he dropped knife and fork, staring at the child, and crying, "Johnny, Johnny." He became agitated, and confessed himself an impostor. "Madam, I am not a workman; I am Jim Floyd, and I was discharged yesterday from Moyamensing prison, where I have served out a sentence for burglary. I was once a decent man. I left my wife and my old mother up in Pottsville, and my baby. Little one (he said, holding out his hands with entreaty), shake hands with me, won't you? I wouldn't hurt a hair of your head." The baby ran forward, smiling. With outstretched hand Jim kneeled down beside it, with tears in his eyes. "It's so like Johnny," he muttered. "You'll go back to Johnny and your wife and your old mother," said the lady. "It's too late to make a decent man of me," said Jim, and putting on his old cap he went out. But six months afterward the lady received an ill-spelled letter from Pottsville, in which Jim said: "I am at work here. That night I had planned to join the boys, but your little girl saved me. I came home instead. It wasn't too late."

Every character is moulded by the social surroundings, as a plant is developed by the sun and air. The chief moral education at present is the influence of woman, especially as the mother. Children not only imitate what they see, but catch the very tone and spirit of their associates, and are controlled by the public opinion of their surroundings.*

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*A little girl's doll, having tumbled from its seat in a toy carriage, she broke out in imitation of her seniors: "Sit right up, you

The evils of sexual exclusiveness in schools may be greatly relieved by having the teacher and the pupils of different sexes: a man for the instruction of girls and a lady for the instruction of young men and boys have a very beneficial effect. Co-education is especially necessary in America, for our colleges, in their republican simplicity if not poverty, often receive from very uncultivated families boorish young men, ignorant of social proprieties, and turn them out with very little improvement in bearing and manners; while wealthy English colleges, with their company of Fellows and Professors, stately buildings, monuments, dining-halls, relics of antiquity, ceremonial manners and social usages long established by the higher classes, give the manners and exterior of a gentleman. Co-education, however, will in time give a truer and more complete refinement to the American graduate. Co-education inspires a sense of character and feeling of self-respect which tend to make the pupil a law to himself and relieve the burden of the teacher; hence it prepares happily for another comparatively new feature of moral training which differs essentially from the old ideas.

SELF-GOVERNMENT.—Moral training which stops short of this is very incomplete indeed. The object of education is to qualify men to act wisely from their own impulses, when free from restraint. It cannot be attained solely by keeping them in tutelage. Unless the pupil has become sufficiently mature and upright to act wisely and well—unless the body of young men are capable of governing themselves, they are not fit to be discharged into society in that condition.

The brilliant example of Fellenberg, at Hofwyl, assures us that young men may be brought into a much higher state of discipline than obtains generally in society, in governments, or even perhaps in churches.

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horrid old thing! Don't you dare to do that again or I'll whip you." Then observing that a spectator had approached she assumed the company manners, saying gently, "Now sit up straight, and be careful not to fall and hurt yourself."

Self-government is not to be fully and suddenly developed in the latter years of college life, when all the previous years have been either slavish or lawless. It should be introduced in the primary school as far as possible, and if boys of fourteen are not entirely competent to self-government after all their previous training there must be some fault in the teacher or his system.

Let the teacher begin by framing a set of rules for the deportment of his pupils. Let the rules be very few and very simple, so that their necessity and reasonableness shall be apparent. Let him consult the entire school as to their adoption and modification, and secure their cordial assent. Those four or five rules would be a sufficient code of by-laws *to begin with*, and the decision upon cases of violation and the penalties could be an interesting exercise for the whole school, or (if too young) for a jury of senior pupils.

The propriety and necessity of all the rules should be well understood by every pupil, so that a strong public opinion in the school should be arrayed against their violation. The penalties should be such as correspond best to the laws of nature—such as seem naturally to follow the offence: for example, fighting and quarrelling should be punished by exclusion from the playground, and by the refusal of his comrades to associate with or speak to him until thoroughly repentant. Indolence should be punished by the loss of advantages which are to be gained only by industry; disobedience, by placing him under vigilant supervision and physical restraint, or by giving him a drilling in prompt obedience to orders; noisy deportment by seclusion; uncleanly habits by subjecting him to frequent inspection or to washing; neglect of duty by loss of valuable privileges.

Under this system the self-governing power of the pupils would continually increase, and they could be intrusted more and more with the formation and administration of the rules, until the young men became the actual governing power and the teacher act as a president, occasionally using a veto power or a pardon.

The ease with which a governing public sentiment may be established in college is illustrated by what Bishop Dudley says of the University of Virginia, in which comparatively little effort is made for moral control. "Let me not fail to add that this same public opinion has developed and protected a moral tone in the University of Virginia, such as the police and espionage and rigid discipline, so called, of other institutions have striven in vain to generate. I mean that in the University of Virginia, naught that was false or dishonorable could find its home. The students themselves could and did banish in scorn him who under any circumstances should tell a lie. The old-time deceit of a professor by his pupil elsewhere recognized as usual and legitimate is here unknown."

That freedom and self-government are indispensable to developing a high-toned character is self-evident to those who understand human nature. Government by arbitrary force produces an abject and servile character. It is fatal to self-respect, to the sense of honor, and to high-toned ambition. The slave grows into an abject, puerile, treacherous, deceitful, and sneaking character. Treated like an animal, controlled by the harness and the lash, man assimilates to the brute in his nature; but treated with respect, love and justice he attains the highest possibilities of his soul. The only government which does not injure or degrade its subject is that which wins his admiration, reverence, confidence, and love. Without these there is no moral development and no moral government. Moral government is the stimulus of moral development, and moral development renders moral government perfect.

The practicability and expediency of self-government were so fully demonstrated in the school of Fellenberg that the failure of colleges for half a century to introduce, or even attempt to introduce this vast improvement is one of the most signal evidences that they are not yet emancipated from the stagnating influence of the dark ages—the power of automatic habit.

The principle of self-government was introduced into the Illinois State University in 1870, which has recently had as many as 400 under-graduates. A constitution was prepared by the students, with the concurrence of the Regent, according to which, as subsequently amended, the legislative power was vested in a Senate of twenty-one members, each holding office a year, the Regent and Faculty retaining a veto power. This elective senate enacts the laws or regulations which are enforced by fines of sums not exceeding five dollars, imposed by a court consisting of three judges and a marshal. A President, Vice-President, Secretary, and Treasurer are elected by the students, and the final enforcement of the laws rests in the power of the Faculty to suspend or expel the contumacious. This system has been sustained by the sentiments of the students, and has been in successful operation more than ten years. Under co-education its operation would be still more harmonious and successful.

An admirable feature of the self-governing system has been developed in the Lasell Seminary for girls at Auburndale, Mass. If any student at the end of one term is regarded as deserving such trust, she is enrolled on the list of "self-governed" and is then permitted to do as she pleases, so long as she continues to show herself worthy of such confidence, which is the highest honor of the school. Under a proper ethical system, I feel assured that nearly all of the female students and a majority of the male might attain this honor.

No system of rigid restraint and suppression by authority can teach men proper self-government. German youth are kept under a rigor of parental authority at home which would astonish American boys, yet when at college their drinking, fighting, and other habits show that repression does not permanently repress.

In true moral education the idea of government almost entirely disappears. Teacher and student are united in the desire to do right, and therefore there is no conflict of self-will and authority. The desire to

do right is a desire to do as older and wiser minds suggest, and *obedience* is a positive pleasure. The New York *Times* admirably defined educational management by saying, "To influence the young to their being governed without their knowing it—by being at once of them, with them, and still above them—is the ideal type of successful management."

In this view corporal punishment is a relic of barbarism, and yet the Boston school reports say that "the number of reported corporal punishments dealt out to the boys in the grammar schools during 1879–80 was 10,983, a number equal to 84½ per cent of the average number attending these schools." The committee also said, "they have no doubt that corporal punishment will be substantially done away with by ridding the schools of incompetent teachers." In New York, however, where corporal punishment is abolished, a late report of the superintendent says: "There are fewer dismissals from schools for misbehavior." "Kindness, as a rule, had greater influence in securing discipline and respect than physical force." The new regulations for the elementary schools of France prohibit corporal punishment. The union of the sexes would render their moral self-government much more successful by the more amiable, thoughtful, and reverential tone of feeling which it would produce.

The teacher, however, should not cease to be a vigilant and influential moral power. His influence will be especially necessary with new pupils who have not yet imbibed the spirit of the school, and with those who have had bad examples at home, or who have been sent to him because unmanageable elsewhere.

With youth of favorable dispositions the self-governing power of the school, the power of its public opinion and the joint influence of the sexes, animated by soul-moving song, would leave very little for the teacher's authority.*

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*At Hull, in Canada, a number of playful boys arranged a mock court in the corridor of an old school building, and arraigned one of their fellows on a charge of disorderly conduct. He was con-

With the unfortunate classes, predisposed to indolence, disobedience, vice, and crime, the teacher must come in close contact with all his moral power, and train them in vigilant self-inspection and

CONSCIENCE-WORK.

Every day, preferably every evening before retiring, the teacher or parent should engage in a friendly confidential review with the pupil of his conduct through the day, winning his confidence and acting as his confessor—strengthening his good purposes, training him to judge of his own deportment, and sustaining him by approbation and praise in meritorious efforts.

There is great power in this conscience exercise. It has been the chief reliance of Mr. Howe in the Ohio State Reform School, which has so successfully reclaimed the young convicts of that state. But it must be kind and sympathetic, like a mother's love—not for the purpose of censure and inquisitorial torture, but to rouse moral reflection and confirm good resolutions—to give the moral support of a vigilant and intimate friend, in whose presence shame would check unworthy thoughts or deeds.

Such an exercise should be daily with pupils that need it, and should be a weekly exercise with all. It will greatly strengthen the moral control of the teacher, and increase his friendship and intimaoy with his pupils and his knowledge of their exact moral status. A teacher endowed with psychometric penetration would so thoroughly realize the exact status of the pupil's mind and character as to be able to direct his attention skilfully to his own peculiarities and to show him how he would be benefited by a higher standard of character.

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demned to pay a fine of $2.50 or lie 15 days in jail. The chief of police, however, appeared on the scene, arrested the culprit and carried him before the Recorder, who enforced the judgment of the boys.

ETHICAL STUDIES.

Of a similar character is the influence of ethical studies.

Of course virtues are not acquired by merely reading essays or hearing lectures upon them, but moral instruction is a necessary part of our course of moral training. Feelings are not always competent guides to conduct. They give our moral nature its strength, but not its wisest capacities. The rude strength of the untrained man does not enable him to succeed as a swordsman or as an artizan, and the rude energy of the moral nature is liable to many unfortunate blunders if not well disciplined in connection with intellect. We are apt to think that entirely right which society approves, and to feel that we are entirely right in anything prompted by our passions.

Sentiments which are not disciplined into habitual activity are apt to become dormant, and if not properly enlightened they defeat their own aims, as we have seen all over the world in the misdirection of the religious sentiments, in superstitions, cruel customs, and fierce intolerance.

Conscientiousness or the sentiment of duty desires to be shown what is right and what is wrong. The moral sense is therefore intimately connected with the reasoning intellect which it stimulates, and is so much influenced or guided by it as to have led many speculators to suppose that the whole moral nature was the product of education. The falsity of the theory, however, is easily seen when we reflect on the uncontrollable power of the emotions, the sense of duty which leads the martyr to die by fire, the love which makes the mother sacrifice her life to her child or to her husband. Love operates independent of education, not only in all human races but throughout the animal kingdom generally. The maternal love of birds even of fierce, carnivorous species, and even of some species of fishes, is stronger than any quality depending on education.

There is no doubt, however, that education may revo-

lutionize the practical manifestations of character by changing the direction in which our sentiments operate, and leading us into true or false views of life. We may be taught, like Calvin, to consider it the highest duty to sanction the burning of Servetus, or to engage at the command of king or priest in the wicked wars which have so often desolated civilized nations.

The function of the moral instructor is to show the good or ill effects of human conduct in all its varieties, in its permanent as well as transient influence.

The ethical instructor should describe and explain the nature of all the virtues, illustrating their operation in daily life with the aid of anecdotes and biographical sketches. His descriptions should be not only graphic in detail and philosophic in analysis, but eloquent in expression.

The pupil should be exercised in criticising his own conformity to duty, but not in criticising or censuring others.

The idea should be firmly and frequently impressed upon him that *he must look for the causes of his success or failure to his own merits and demerits* instead of finding fault with the world.

In the game of life *it is his duty to aim at success, and if he fails he should review his course to see how he might have succeeded,* and look at the lives of others to see how they won success. Whether he be sick or poor, unpopular, friendless or unlucky, in any way, he should bravely face the facts and see how he might have won health, prosperity, and reputation by a wiser course. Possibly he may come to the conclusion that his native powers are not sufficient to achieve any very great success and thus learn to be content in his natural sphere. But if well instructed, he will perceive that health and a considerable degree of happiness and success are within the reach of all who act wisely or in conformity to law, and his teacher perceiving his capacities will encourage him to attain all that is possible.

HEALTH.

A proper course of ethical instruction will not fail to emphasize the physiological duties—the duty of attaining as perfect health as possible—the means of performing all other duties.

This duty has been heretofore generally ignored, and health regarded either as a mysterious dispensation of an inscrutable providence or a matter of accident beyond human control.

But in truth the preservation of health demands only an enlightened vigilance. He who at twenty-one years of age does not know the effects of all variations of diet upon his health better than any physician can tell him has been a very idle or careless observer.

He who does not realize the effects of a prolonged chill, of oppressive heat, of debilitating malaria, of personal uncleanliness, of excesses and irregularities, of draughts of cold air, of ill-ventilated apartments, of overwork, of sedentary habits, and of prolonged idleness, and endeavor to avoid such evils, is criminally negligent and is inevitably punished for his defiance of the laws of nature.

Disease is not an enemy that strikes us like a cannon-ball, suddenly and inevitably. It is an evil companion that becomes fastened upon us only after we have dallied too long in his company, and this dalliance is our crime. To eat what we know is unwholesome to us, to sit in the draught which we know may produce a cold, to prolong our work when our strength has been exhausted, to sacrifice our needed rest, and to permit ourselves to become gradually (for all these troubles come on gradually) dyspeptic, rheumatic, consumptive, feverish, constipated, bloodless, and feeble, without an effort to throw off the malign condition is a crime. The Divine law makes it a crime for which there is no immediate pardon. Physiological crimes and pathological punishments inevitably go together, and all we can do is to moderate the duration of the punishment by a prompt return to duty.

It is not claimed that every one knows by intuition what to do in all cases of slight disorder. Medical advice is often necessary, and is generally successful if taken at the very incipiency of any disease. But it is the duty of every individual as far as possible to live above the need of medicine—to attain that muscular development, that expansion of the lungs, and that abundance of red blood which render him comparatively insusceptible to the influence of any slight cause of disease.

An abundant supply of healthy, red blood is the chief basis of health, and in proportion as the red elements of the blood diminish the vital power declines, and the attacks of disease are invited. Tuberculous consumption, the leading disease in the bill of mortality everywhere, never occurs where the blood has been maintained at the healthy standard. (When the red corpuscles amount to one-eighth.)

A liberal, wholesome diet,* an active life, and, perhaps, a little iron and hypophosphites, with a few mild aperients and tonics occasionally, will produce this abundance of blood upon which health mainly depends.

The teacher should explain the rules of health and the use of a few simple remedies for slight disorders, and should require of each pupil to be as well prepared in health every day as he is in the knowledge of his text-book theme. He should be taught to consider every slight disorder of health and disqualification for duty as discreditable as a failure in any other requirement of his studies and his morals.

Hence the teacher should have a medical education,

* One of the most pernicious fanaticisms of the day is that physiological puritanism or asceticism which regards ultra temperance or abstinence in food as a source of health, when in reality it is often a cause of slow decline, nervous diseases, general debility, chronic disorders, and consumption. Health requires abundant nourishment, followed by the abundant activity which insures deep respiration, purifies the blood, and animates the secretions. Defective nourishment leaves the blood development below its normal condition, producing that debility and irritable excitability which are the general preliminary of all diseases. Such debility lowers all the moral powers and facilitates all wrong-doing.

at least to the extent of understanding hygiene and the domestic treatment of slight disorders. Indeed all classes should have that amount of knowledge. Hygiene and a general knowledge of therapeutics are indispensable to a liberal education, and when taught they should be accompanied by imperative moral lessons as to the duty of obeying hygienic laws and the disastrous effects of their criminal neglect.

When we have education as it should be, the teacher will watch closely the physical education of every pupil, and not be satisfied until every one is brought up to the highest efficiency and health. Why should we have mental culture at the expense of the body in literary schools,* and bodily culture only in the schools of pugilism? Why should not every school give vigilant attention to the robust attainments of the gymnasium and play-ground, which furnish the physical basis of a career? Diet and exercises, electricity and baths have such a developing power that parents should not be satisfied without witnessing a *marked improvement* in the physical condition, power, and vital perfection of every student.

All these things must be recognized as indispensable elements in moral education. Physical perfection sustains moral power and perfection, and is a treasury of wealth. The trustee of an estate has as little right to waste it and reduce it to bankruptcy as the teacher to send forth a pupil bankrupt or impaired in health.

Our healthy bodies as well as our inherited or accumulated estates are sacred trusts for mankind—for those whom we call our brethren; and when young

* A committee of the Elmira Board of Education reported that, in its opinion, "if all the mere physical ills which grow out of competition for prizes and class honors, including a wide-spread spirit of emulation, could be revealed to the scrutiny of school-boards as they are exhibited to medical men, in the forms of impaired appetite, indigestion, headache, sleeplessness, impoverishment of the blood, etc., the system which fosters and encourages such unnatural exercise of mind and body among young, undeveloped and growing children would yield to a more rational method of education."

men are rightly educated they will frown indignantly upon the profligate excesses that undermine health, and the profligate ostentation that squanders the wealth for want of which millions are sunk in ignorance and suffering.

I trust these ideas are not unfamiliar to enlightened teachers and parents; but I must go much farther and affirm, as the result of my deepest studies of anthropology, that the ethical nature, and not the chemical or mechanical processes studied in medical schools, is the true basis and source of health, and this great truth is destined to revolutionize our system of hygiene and education.

I am profoundly convinced by physiological studies and experimental investigations which began forty-seven years ago, that our collegiate doctrines of physiology embrace fundamental falsehoods, because they have studied man in one aspect alone, and that the lowest. They have studied him simply as a machine, moved by mysterious combined forces belonging to the domain of chemistry, and not as a living being. They look at the body, which is a temporary organism, held together by vital power, but continually decaying, wearing out, and destined to destruction as soon as that vital power leaves it. They blindly ignore that vital power (because it is invisible and intangible) which develops that body from a simple cell into a predestined career, and which, having exhausted the uses and purposes of that organism, having worn it out in service beyond repair, abandons it to decomposition, carrying off in perfection all that animated, organized, perfected, and controlled that power—the life which is eternal, and which exists in far higher perfection when disassociated from the body than it could ever manifest in the physical form.

Our blind physical scientists find no evidence of life as an entity in the body, or of its grand career when it ascends from the body; and even religious history fails to make them realize what a thousand facts are daily demonstrating all around them, and it would be needless for me to offer them any evidence upon a

question which in their blindness they think they have disposed of; but to those who are not afflicted with this fashionable myopia of the schools I would say that as the soul, which is life, and which determines the organic forms that it temporarily occupies, has in itself eternal life, not subject to disease and destruction, man on this globe is also exempt from disease in proportion as he is developed in soul-life—in proportion as his nobler nature is perfected and dominates over the chemical and mechanical conditions of the organized body, imparting thereto a portion of its own noble and durable nature. In other words, the more highly we are developed in that soul-power called *will* which commands the body, and which is sustained and reënforced by all the lofty principles and purposes of duty or religion, in which the soul of man correlates with the infinite oversoul of Divinity, the greater is the organizing, controlling, and independent power of that eternal life in us which resists disease and makes the body a perfect instrument for its best purposes. The true hygiene is based upon the true physiology. Life comes from above, as philosophy and religion teach (and as my experiments demonstrate), or it comes from below as medical scholars and physical scientists teach. It comes from the spiritual realm of eternal life, or from the material realm of eternal death, by some unknown law of bioplasmic organization and development never yet proved.

If the former be true, ethical culture, or soul-development, must be our chief reliance for universal health. If the latter, we must look to the predominance of matter, of bone and muscle—the full development of man as an animal. Experience has already decided which is practically true. The statistical report of Mr. Finlaison on Friendly Societies, printed by order of the House of Commons in 1853, arrives at the conclusion from statistics that "the practical difference in the distribution of sickness seems to turn upon the amount of expenditure of physical force. The quantum of sickness annually falling to the lot of man is in direct proportion to the demands upon his muscular power."

Hence it is that assurance offices find that female annuitants are longer lived than male, and vital statistics show that males have a greater mortality than females. According to Farr's English life-table the female expectation of life is greater by two years in infancy and continues superior, being at the age of seventy still six months greater. In contrast with the longevity produced by the more ethical and tranquil life of woman, we should find, if statistics were collected, the short duration of life among the debased and criminal classes. We know by Neison's Vital Statistics that life among the intemperate is less than half the average of the entire community.

Of all human pursuits not ranked as criminal, the military life is the farthest from divine law, and consequently farthest from the law of health. "Statistics tell us that soldiers, *though picked men*, living in costly barracks in Britain during peace, are nearly as unhealthy as the people of our unhealthiest cities, and sometimes almost twice as unhealthy. The mortality at all ages in the army at home is almost *double that of civilians*, age being alike."—*Chambers's Cyclopædia.*

Universal experience shows that culture in the direction of soul brings man nearer to the eternal, spiritual life of health, serenity, and happiness, while culture in the animal or physical direction (beyond what is necessary to the equilibrium of the spiritual and physical) results in degradation, disease and death. Pedestrian matches and rowing matches are dangerous to health. The moral and physiological degradation resulting from excessive cultivation of the muscles was graphically and forcibly portrayed by Wilkie Collins in his interesting fiction, "Man and Wife." The scientific comprehension of this question requires familiarity with that anthropology, unknown in colleges, which comprehends the joint operation of soul and body.

The paramount law of hygiene, therefore—more important than any other law—is that we should resist disease and degradation of the body by strengthening its eternal life; and that is to be strengthened only by

living on the high plane of duty—the life of divine love and heroic service—as Christ, the noblest model, lived, whose perfect health not only filled his own frame, but in its superabundance poured forth on all whom he touched, or even looked at, himself being continually filled from divine source; for in the higher soul-realm there is an eternal radiance which develops and uplifts all who approach.

The practical lesson from this divine philosophy is that *the life of perfect duty is the life of perfect health*, and that in proportion as the principles of ethical education, to which this work is devoted, shall be adopted by mankind the reign of epidemics will cease, and the labors of the medical profession will become an insignificant element in our social condition.

It is even believed by many at present that with sanitary science to abolish malaria, and with hygienic instruction and physical culture to enforce the laws of health, the demand for drugs will almost cease; but it would be utopian to expect so great a change by looking to material measures alone. Men and women will continue to be sick and to use medicines in the purest atmosphere, and under the most perfect dietetic systems, until they reorganize the human constitution by elevating its spiritual power, lifting it above the plane of delicacy, sensuousnes, appetite, passion, selfishness, anger, melancholy, jealousy, and despair to the higher plane of heroism, fortitude, serenity, hope, faith, enthusiasm, and love, where godlike life will develop godlike health.

This is not a mere hope or hypothesis, or a mere philosophic doctrine; it is a truth which has in every age been verified by saintly heroes, and is now being verified in the cure of the intemperance of hopeless drunkards, in the reformation of abandoned criminals, in the healing by prayer of those for whom physicians could do nothing, while the converse is demonstrated in armies, in criminal careers, and in the social turmoil of unbridled selfishness, from which we see no escape but by moral education.

CHAPTER V.

ETHICAL PRINCIPLES AND TRAINING.

Character of the teacher.—Importance of cultivating reverence and modesty.—Study of the pupil.—Honors and rewards.—Punishment contrary to ethics.—Love for the erring a duty.—Restraint and kindness.—Power of kindness over animals.—Censure and disgrace injurious.—Importance of music.—Vast difference of ethical and animal music.—Its hygienic and moral benefit.—Music without soul or moral power.—Cultivation of manners.—Examples of English, Italian, and Japanese.—Social influences.—Influence of the departed.—The great and good in history.—Biographical reading and choice literature.—The low and frivolous tone of society.—Elevated aims of moral education.—Economy one of our greatest duties.—Essential to national welfare.—Criminality of governmental waste.—Torpor of the public conscience on this subject.—Kindness to animals.—Enormous amount of cruelty in vogue.—The German view.—Kindness at home.—The happy family.—Code of manners and intercourse of the sexes.

IT has not been my purpose to present a complete code of ethics and ethical instruction, but I have been led to comment on erroneous methods and necessary reforms, and especially upon the transitional methods required with those who are not yet controlled by the lovely spirit of song, and the social atmosphere it produces.

Following this line of thought there are several topics demanding attention, relating to methods of control, manners and sentiments and educational aims.

An essential requisite of moral education is that it shall begin in the teacher—in his large, loving nature giving him a desire to teach instead of *imposing task-work* on his pupils. With the impulse of love he goes direct to his pupils, pours out his knowledge in oral instruction, in visible illustrations, and watches the devel-

oped interest, the ready comprehension on their part, stirring up their minds by direct appeals, questions, and conversation, until they are all inspired with his enthusiasm and happiness. The true teacher cannot tolerate a dull, indifferent, or dissatisfied class of students; he will vary his methods until he has found the perfect charm that carries them along with him and makes them love him. This changes the old style school from a purgatory to a paradise, and something of this sort has been in a degree realized at Quincy, Massachusetts, where the school committee discovered that the system in use was "all smatter, veneering and cram," and this mechanical task-work system was superseded by bringing in a live teacher who made their lessons interesting and never prolonged any exercise to fatigue, but alternated with recreation. This vitalizing method proved not only more healthful and progressive, but actually cheaper—the annual cost per pupil being reduced from $19.25 to $15.68, and "the Quincy experiment" has become famous.

The first requisite for successful educational work is the establishment of the sentiment of REVERENCE. The familiarities of home are detrimental to this sentiment, not that familiarity *always* "breeds contempt," but certainly it diminishes the power of reverence. As the church and the tribunal of justice are arranged to appeal to this sentiment, enforcing deference and silence, so should the school-room be, in the dignity of its appointments and the unanimous deference to the teacher. The reverential sentiment subdues the animal nature while it exalts the moral and intellectual, opening the mind to all good impressions. The reverence of the pupil must be maintained by the dignity of the teacher, his calm and courteous deportment, his superior intelligence, and his unquestionable authority. Abruptness, harshness, and scolding are not compatible with this sentiment, nor does it admit of loud and boisterous manners. Courtesy and gentleness of manner should be uniformly practised and enforced, and the habit of loud talking strictly repressed.

A pupil in whom the reverential sentiment is de-

ficient should be removed from scenes of turbulence; should be subjected to the discipline of modesty and silence; should be made to realize his own ignorance, and ask assistance from equals or seniors. But above all he should be treated with extreme respect and politeness and required to observe the forms of extreme courtesy, for violations of which he should be subjected not to corporal punishment, but to confinement, from which he might be relieved after singing with a companion or assistant teacher in a sincere and earnest manner. The beneficial effect of punishment is proportioned to the calm and amiable spirit in which it is endured, and the irresistible power which compels submission. The possibility of successful rebellion is a strong temptation.

Reverence is often extremely deficient in American society. Children are oftenb rought to the table or into the parlor and allowed to talk in a noisy, reckless manner, as if entirely unconscious of the presence of their seniors. Silence, modesty, and courtesy should be enforced, to permit the growth of reverence. The Spartans gave their youth thorough training in reverence and modesty, as well as heroism; the gravity and modesty of their deportment would make an extreme contrast to what we often see in American youth.

Reverence is cultivated by religious songs and prayers, by the practice of courtesy in manners, and by exercises in which the attempt is made to obey the word of command as in the drill of soldiers. Not only the school exercises, but the sports and games of children may be controlled equally by drill.

To command reverence the teacher should be preeminently worthy of respect by the dignity of his personal appearance, force of character, and superiority of manner and of knowledge. In addition to this he should be a practical anthropologist. All his knowledge of books gives but a morbid, one-sided development of his powers unless he understands the great book of human nature. The man described by Milton—

"Deep versed in books, but shallow in himself"—

is no more fit for teaching than a theoretical surgeon unacquainted with anatomy for a capital operation. That psychometric power which penetrates and appreciates character is a primitive faculty independent of education and enables some to penetrate the very thoughts of one on whom they fix their eyes. The teacher endowed with this power is working in the light; without it he is working in darkness. The mind-reading power is not an abnormal or anomalous endowment, but a power exercised in some degree by all mankind, and even by animals (especially the dog); but exercised through the eye when we read instantly the sentiment or purpose of the face on which we gaze, and take in the whole height, breadth, and depth of the character. Nearly all great and successful men possess this power of judging character in a high degree, and are successful in following their first impressions.

The firm and dignified bearing of the teacher, the established habit of prompt obedience to his commands, and the soul-swaying power of song soon become the sole reliance for moral control; but there are other means in honors, rewards, and punishments, which are often useful.

The effort to gain distinction or honor, to be appreciated and honored, is entirely proper. But where emulation involves rivalry, and the success of one is gained by the failure or discredit of another, being merely a comparative success, we introduce an evil element,—the spirit of conquest, domination, and jealousy. Honor which is gained not only by our own merit, but by the demerit of others, which places them behind us, is apt to elicit a selfish feeling.

Honors and rewards, therefore, should be for positive and not comparative merit, and given to all who have attained the proper standard of merit.

A judicious use of badges and medals for the best pupils will add a powerful stimulus to their exertions. Such badges as honor, gentlemanly deportment, fidelity, scholarship, neatness, punctuality, perseverance, manliness, politeness, etc., might be used to

reward these virtues, while historian, mathematician, naturalist, linguist, orator, writer, chemist, geographer, etc., might be used to reward intellectual proficiency.

This recognition of merit is but just and proper appreciation. It should be shown not only by medals and badges, but by public commendation. The pupil is really entitled to receive it, and is stimulated by it to higher self-respect and honorable ambition, while the hearty recognition of merit exerts a happy influence upon the young in teaching them to honor and respect virtue and intelligence wherever they see them instead of limiting their admiration to elegant clothing, or to physical prowess. There is a great difference between the moral tone of a school in which moral and intellectual superiority are admired and sought, and of one in which boxing and baseball alone are matters of pride.

The influence of such rewards and honors is much more powerful with girls, and the moral sensibility of a school to such motives is greatly increased by the presence of female pupils.

It may not be necessary or desirable in a well-disciplined school to use these powerful stimulants at all. They should be brought up as a reserved force whenever the evil propensities offer a prolonged resistance to the good, or when more vigorous incentives are needed to animate their intellectual life. But shall we punish?

Punishment is the spontaneous reaction of our own bad passions against the assaults from others. It is the injury inflicted by an animal upon its assailants by which it repels their pursuit and prevents their future assaults. There is a feeling in punishment that we have a right to inflict it—that it is not only a necessary protection to ourselves, but something that is merited by the criminal or enemy; that its infliction is a right of which we must not be deprived.

Whether this sentiment emanates from justice (or conscientiousness), or is simply the inspiration of a spirit of revenge which is apt to claim its gratification as a right, is an interesting question. Perhaps the

two elements combine in the desire of inflicting punishment, which prevails among men of strong passions. The revengeful impulse is greatly strengthened by systems of theology which represent God as delighting in vindictive punishment.

When justice or conscientiousness is guided by love and wisdom instead of the malignant passions it comes to different conclusions. It does not hate the criminal and "nurse its wrath to keep it warm." It regards the criminal as the parent regards an unfortunate child—as the victim of an evil destiny, of an inherited depravity, or of an accumulated force of evil education and example, whom it would not be more rational to hate than to hate a drunkard or a lunatic. However debased, he is our brother still.

When a father consigns his child to the care of a depraved family, where beastliness, drunkenness, theft, murder are its daily examples, we should feel as tenderly for that unfortunate child as for its brother who, with no better original character, has been preserved in the path of rectitude. One is a lovely and the other a repulsive object, but he is a shallow thinker who cannot look beyond the attractiveness or repulsiveness of the individual to the essential rights of the human soul—its claim upon our sympathy, love, and assistance, which is not forfeited either when the man becomes a hideous mass of disease, or when his soul is poisoned into a mass of moral deformity. The very fact that a child has been morally ruined by depraved associations gives him as urgent a claim upon us for his restoration as if he had been made hideous by the contagion of confluent small-pox. True, in the latter case he would not be morally repulsive; but as charity can overcome the physical repulsiveness of confluent small-pox to do its duty, surely it might also overcome the moral repulsiveness of a criminal in whom we can always discover some glimpses of original goodness, and who, in the great majority of cases, as shown by the experience of prisons and reformatories, can be restored to uprightness by persevering moral education. Even the train-

ing of two or three years has generally been sufficient for the regeneration of the young.

The vindictive sentiment which comes in and clamorously asserts that justice requires the *punishment* of the criminal, and is basely defrauded when he is kindly educated into virtue, is the fierce inspiration of the malignant passions, which are themselves the essence of crime, and which are roused into action by the aggressions of the criminal. He who cannot look upon criminals of any grade with the sentiment "Father, forgive them, they know not what they do" has not yet learned the chief lesson of ethics. The criminal and his victim are both objects of compassion, and the compassion for the criminal is greater as his misfortune is greater, involving his soul and extending its calamitous effects beyond the present life.

True, it is right to defend ourselves by violence against the criminal, because it is a necessity; but he is a poor thinker whose judgment becomes entangled in the meshes of passion and cannot see that the criminal is the victim of an adverse fate (which might have overtaken himself), whose reclamation calls for our help as loudly as the spectacle of a drowning man. If we cannot control him we may be compelled to fight him for the protection of ourselves and others; but whenever we have physical power to control him and do not proceed to his redemption we become criminals ourselves. The state which *punishes* instead of reforming its criminals is a criminal itself or a victim of the contagion of crime—for all crimes are contagious. The knave tempts other men to tricks and treachery to circumvent him, and the homicide makes homicides of others who are tempted to kill him in advance. Thus the mob hangs the murderer, and governments have only of late risen *a little* above this animal contagion of crime and begun to think seriously of reformation instead of torture.

With these views we cannot tolerate *punishment* as proper in schools. Resentment has no *place* in moral education. How to overcome this resentment is a great moral lesson, of which the teacher himself is

very often in need, educated as he has been under the vindictive system, and not realizing that evil can be conquered only by its opposite.

Criminal propensities must be repressed by substitution of something better, as weeds are kept out by a compact greensward or by the overshadowing growth of the forest. The intense activity of the intellect under instruction, and of the loving sentiments under the inspiration of song, exclude the evil passions as effectually as the gentler emotions are excluded by the exercises of the prize-ring.

If the violent passions of a pupil are still uncontrollable, which would be a rare and extraordinary case, there should be a physical restraint adopted, accompanied by kind and respectful treatment sufficiently overwhelming to remove all idea of resistance and to keep his passions in enforced tranquillity. Solitary confinement or the straight jacket should be used, while a kind and friendly bearing in all who come into contact with the culprit should show that they sympathize with him and prevent his indulging in anger. The kindest attention should be given to all his little wants, and the moral influence of song and conversation should animate his better sentiments while under physical restraint, until his hearty repentance and pledges of reformation justify his release, when he should be received with the embrace of love to assure him that he is restored and encourage him in self-respect and virtuous resolutions. Penalty and kindness might be combined in the treatment of the most vicious and unmanageable. If addicted to quarrelsome pugnacity he might be isolated, and after a time a companion sent to sing and relieve his loneliness. If his arms were pinioned by his side his companions or teachers might show their kindness in feeding and serving him. But all should be done in kindly courtesy, avoiding all unnecessary censure or coldness of manner.

To counteract an evil propensity we should take away the opportunity for its exercise. When the evil passion is curbed by an impossibility it quietly sur-

renders. If a boy is disposed to domineer over his inferiors or juniors confine him to the society of his seniors and the evil propensity must die out. If he is disposed to be gluttonous give him very plain, coarse, wholesome food and he will become temperate, or let him take his lunch in his hand and eat as he is walking about or playing and he will be sure not to eat to excess. If he is disposed to be noisy and turbulent place him in a hall of silence, a school-room or church. If he is disposed to resist authority let him perceive that the authority is so strong that resistance would be in vain. The evil propensity should be conquered not by a struggle, but by crushing it under impossibility. An ingenious gentleman has controlled a balky horse very quietly by a simple device—merely dismounting when he stopped and drawing up one of his forefeet by a strap, leaving him to stand on three feet until he realized his helplessness and became willing to move when released.

In many cases where punishment would seem necessary kindness dispels the evil inclinations and renders it unnecessary. As all intellectual beings are governed by the same psychic laws, the education of animals throws much light on the education of man. It has often been proved that animals are educated by kindness to the best development of their powers. Even the milch cow illustrates the value of kindness. Mr. Willard in his book on butter says:

"It is really astonishing what a large difference in the yield of milk it makes by attending properly to a number of small things in the management of stock, and withal preserving a uniform kindness and gentleness of treatment throughout every operation —a gentleness extended even to the tones of the voice. Generally speaking, the cow will do her best that is loved the best and petted the most by those who have her in charge. If you wish a cow to do her best you must cultivate her acquaintance intimately and be unsparing in little acts of kindness."

One of the most high-tempered and ungovernable horses of America, the mare Maud S., was successfully managed by kindness. Mr. S. F. Harris says in *Wallace's Monthly:*

She is wilful, high tempered, and imperious. She resists brute force with a violent resentment that cannot be conquered. She yields to the power of kindness with the affectionate sensibility of a noble-born gentlewoman. She is ambitious to the degree of rashness, and intelligent far beyond her years and opportunities.

No other trainer, within my knowledge, either living or dead, at all times, and under all circumstances, seems to realize that the best method of exercising mind over matter in the horse creation is by the unfailing power of considerate kindness.

When led out for a trial at Chester Park she plunged and jumped with such mad fury that she had to be taken back to the stable; but her trainer preserved invariable kindness and gentleness in his treatment and ultimately made her tractable.

Six perfectly trained horses were recently exhibited in San Francisco, in the education of which the whip had been discarded and kindness alone relied on.

Prof. Wagoner says:

Many think they are doing finely, and are proud of their success in horse-training, by severe whipping, or otherwise arousing and stimulating the passions, and then through necessity crushing the will, through which the resistance is prompted. No mistake can be greater than this, and there is nothing that so fully exhibits the ability, judgment and skill of the real horseman as the care displayed in winning instead of repelling the action of the mind. Although it may be necessary to use the whip sometimes it should always be applied judiciously, and great care should be taken not to arouse the passions or excite the will to obstinacy. The legitimate and proper use of the whip is calculated to operate upon the sense of fear almost entirely. The affectionate and better nature must be appealed to in training a horse as well as a child. A reproof given may be intended for the good of the child, but if only the passions are excited the result is depraving and injurious. This is a vital principle and can be disregarded in the management of sensitive and courageous horses only at the risk of spoiling them.

A correspondent of the *Maine Farmer* says:

A neighbor recently remarked to me, "You have a faculty of charming steers." I replied that it was a mistake. I simply study their nature and adapt myself to that nature. In approaching them (whether they are in yoke or not), though I may "come with a rod," yet I always come with love. If I am in a hurry and a steer is in my path, I never give him a kick, or a thrust, with a yell, "Get out of my way," but instead I allow him the path, while I pass quietly by, gently rubbing him with the hand as I pass. The pressure of the hand on the animal has a powerful influence in

training him, and I had rather engage to bring two yoke of steers to a stage of good working discipline than tame one pair that had been taught to fear the presence of man. I think of several illustrations, one that others may "go and do likewise." Yesterday I was carting with a pair of steers that were impatient about starting. Whenever they started too soon I would back them to the very spot from which they started, and rub their heads, or pick off loose hair from their bodies, and in one half hour the change in their general appearance was surprising. In handling them I always endeavor to persuade them that even the goad cannot harm them. As I always approach them quietly, they have no inclination to retreat from my presence. The "Golden Rule" does not come amiss, even in training steers, and I will treat them as I think I would desire to be treated were I in their condition. I never whip them except in rare cases of stubbornness, and then not severely, but calmly and candidly, without exciting fear in the animal; and the moment he yields, treat him with the greatest possible kindness.

Censure and disgrace are as little beneficial as physical punishments. In fact a vigorous thrashing privately administered without anger and followed by kind and respectful treatment or special friendliness is much better than public censure or disgrace, which lowers the self-respect and excites the evil passions. The only form of real punishment that can be tolerated or excused is that vigorous outburst of physical force which will impress the pupil with his physical helplessness and inspire him with respect for the physical power of his teacher and the promptness with which he can check misconduct. But the storm should always be promptly followed by sunshine. The pupil should never be allowed to think that his teacher has any prejudice or unkind feelings, and special kindness and tenderness should therefore be shown to those who have been controlled by any form of vigorous discipline.

But all these measures for eradicating vices and subduing rebellious natures belong only to the *introduction* of moral education in a new and difficult field. An established school of moral education would have a controlling power in its songs, its general activity and happiness, its harmonious public opinion and its interesting exercises, to substitute new habits in a newly arrived pupil and make it easy for him to walk in the

path in which others are walking with pleasure, sustained by the moral power of harmony—the song that supersedes the rod.

Music is the expression of the perfectly beautiful, of that harmony which is of heaven; it therefore easily brings us into accord with heavenly life. But mere music is not heaven any more than mere language is knowledge; yet as language is the key to knowledge, so is music the key to heavenly life; and as language may unlock stores of wisdom, or of rubbish, or of moral malaria, so may music open to our souls all the wealth of heavenly life, bringing the influx of all we need; or, on the other hand, it may bring a clangor which is not of heaven, but "of the earth, earthy"—as barren for the soul as metaphysics for the mind.

There is not a faculty of the human soul which has not its appropriate food and stimulus in some form of music, and which may not by music be roused when weary or stimulated to its highest intensity. In fact every emotion or impulse, and consequently every organ of the brain, has its appropriate vocal sound and vocal peculiarity, by which it is recognized in the voice and to which sound it instantly responds. Music for moral or religious culture combines in its harmonies all the tones which belong to our nobler nature. But there is a constant degenerative tendency in popular music, as in popular literature, to decline into the feeble expression that suits feeble minds, into the cold hardness which is on the plane of selfish natures, or into the pedantry of detail which belongs to mere perceptive intellect and mechanical execution, or into the expression of the restless, energetic, or violent passions. Music was a leading passion with Nero and the chief theme of his exorbitant vanity, as he fancied himself the greatest musician in the world and was never weary of exhibiting his power to vast audiences. There must, then, have been in the cithara that he played and the airs that he performed and sung something to gratify such a nature as his; and there must be a wide difference in the musical compositions

which gratified him and the blood-thirsty populace that thronged to the bloody scenes of the Coliseum—or which pleases the money-loving, selfish, ostentatious and sensual throngs so often at the modern opera—and the simple music that in old times inspired the throngs of persecuted Christians, and which has ever been the foremost power in the diffusion of Christianity.

"When I am weary of writing (said Luther at Wittemberg to a Flemish traveller), when my brain grows heavy, or when the devil comes to play me one of his tricks, I take my flute and play an air, whereon my ideas return fresh as a flower dipped in water, the devil takes flight, and I renew my work with fresh ardor." "I do not love those who do not love music." "No preacher ought to mount the pulpit until he has learned his sol fa."

While music thus wonderfully renovates the brain by awakening those emotions which sustain and govern the cerebral circulation, it also animates and sustains our health by animating the brain, and at the same time, by exercising the vocal organs, it develops the noblest part of the body. Prof. Monassein, of Russia, examined 222 singers of all ages, from nine to fifty-three, in reference to their spirometric development, and ascertained to his satisfaction that the circumference of the chest is greater both relatively and absolutely among singers than among those who do not sing, and that this superior development increases with the age and growth of the singer (see *Medical Wochenschrift* of St. Petersburg). Skilful trainers of the voice generally recognize the health-improving effects of vocal exercises. The higher emotions and energies are closely connected with the expansion of the lungs, especially of their upper portion, and hence the influx of lofty emotion and thought is called *inspiration*, because physical inspiration is its correspondent and associate. Hence the orator speaks of "the emotions that swell my bosom."

Music, especially vocal music, should therefore be used as a sustaining, energizing power, not only in

school duties but on the play-ground. Observe how little children enjoy themselves as they join hands and march around singing some simple nursery rhyme. Observe how soldiers march to battle with boundless enthusiasm, inspired by patriotic songs—the Marseillaise or Father-Land. See how the sailor alleviates his toil with some rude sound of yo-heave-o, and the negro makes his corn-husking labor a delightful frolic when he can accompany it by songs.

Children on the play-ground would delight to have instrumental music to which they could dance, or to engage in sports in which they might guide their movements by songs and choruses. The introduction of such customs on the play-ground would banish all their rudeness and quarrelling and establish the custom of politeness and good fellowship. Music is indispensable when we would move or cultivate the soul. It gives sweet repose to the cradle, happiness to the fireside, gayety to company, social splendor to the ball-room, the spiritual life without which dancing would be mere muscular gymnastics, solemnity and fervor to the church, and overwhelming power to the religious revival, heroism to the battle-field, joy to all the labors in which it is introduced, and a grand solemnity to the funeral cortege. Wherever it is introduced it carries the soul along to its own sphere.

But this inspiring and religious influence of music is entirely lost among irreligious musicians, whose fashionable airs exhibit musical ingenuity, but not musical eloquence. As verbose orators mistake rhetorical elegance for eloquence, so do musicians often mistake their complexities of sound for essential music, which is the most perfect form of eloquence. Hence the protest against such music in churches. The *Church Journal* says: "The church was a very fashionable one; the choir a large one of fine voices; the music chosen was of the most vulgarly, showy, and irreligious kind, with the exception of the hymns, which were both well known and simple." The *Journal* hopes there may be such an improvement in time that "we may no longer have the melancholy spectacle of a

man preaching spiritual things at one end of a building and a choir singing of 'the world, the flesh, and the devil' at the other!"

Upon this subject musicians are divided, for they have not all abandoned expression for mere sonorous combination, which some call absolute music, as it aims at sound instead of expression. The great musician Gluck "sought to bring back the music to its true function, that of recording the poetry in order to *strengthen the expression of the sentiment*" without superfluous ornaments. Wagner and Liszt maintain the same view. Wagner insists that music should be subordinate to the expression of emotion, and I beg leave to add that it should be devoted to the expression of the higher emotions—all that makes us better, stronger, nobler. It is wicked to sacrifice these purposes to the fanciful desires and false taste of the mere artist. The Rev. Dr. Dix, of Trinity Church, New York, expressed the correct view. "The requisites of church music are that it should be of the essence worship; that it should be devotional, and that it should be simple, so that all should take part in it. The music could then be the voice of the whole people and not of the choir." So in education music should be simple, strong, and emotional, giving to noble thoughts in language the power and the tenderness of the emotions.

In the song-ruled school there is a tone of manners which is an ever-present educating power.

Manners being simply the expression of the moral nature, the cultivation of manners is the cultivation of the soul by their reflux influence. All manners and social rules that are commendable are simply the expression or manifestation of the fundamental law of Christ—unlimited love to God and man. Love includes esteem, respect, appreciation, admiration, and a desire to please; consequently it is always actively courteous and abounding in *kind, appreciative words* while carefully avoiding every appearance of disrespect, of censure, or of indifference. It creates a perfect code of manners, and even when arbitrary rules

are imposed by society it pays respect to social opinion and does not trample upon them.

Reverence, esteem, admiration, appreciation, which are the lower grades of the loving sentiment, are so often lacking in the English-speaking races as to make bad manners the rule rather than exception. A surly coldness and critical disdain destroy the pleasure of social intercourse, or entirely forbid it among strangers. It is delightful to observe how opposite is the Italian system, children being taught polite demeanor and language from their earliest youth. This perfect politeness establishes a social harmony between different ranks and classes. There is nothing to hinder the superior from being cordial to the inferior when the manners of the inferior are always pleasant and deferential. How delightful a contrast this to the surliness of English society, in which each class seems at war with the class below to keep it down, while the rudeness of the lower class often makes it difficult to welcome or even endure its companionship. Thus for the want of good manners society is divided into hostile groups, and the brotherhood of man utterly ignored, even in the church which professes it. The free companionship of the higher and lower classes in Italy, and especially of their children, is an instructive example for the American democracy.

The American teacher should be himself a model of sincere politeness, invariably extending it to the humblest of his pupils, and requiring its observance by all. He should have a written code of manners covering all the details of deportment, which might be pleasantly enforced by appealing to a jury of the pupils to decide upon any infraction.

A model for the treatment of children may be found in Japanese society, and its grand success in moulding the Japanese character to amiability and uprightness is a happy demonstration of the true principles of moral education. Mr. E. H. House says in *Harper's Magazine* (1872):

"I think that one of the most remarkable characteristics of the Japanese is the tender indulgence lavished by them upon their

children, and the reciprocal respect and devotion which they receive. There seems to be no system of discipline or training, as we understand it or profess to understand it, among them. Among all classes, high and low alike, the treatment of the young is almost extravagantly affectionate and considerate. I do not remember ever to have seen a child punished with violence in their country. And yet I should not know where to look elsewhere for equal good temper and docility. It has seemed to me that the early admission of children to intimate and confidential association with their parents, and the frank interchange of ideas and feelings in which they are encouraged, give an ease and an early development, which act with equal good for all. Certainly there is a great deal of natural dignity and manliness about the young lads without any departure, at least so far as a stranger can observe, from the modesty and simplicity which in their family relations become them so well."

Social influence is our chief ethical teacher. It is the food of the soul. He must have a very strong nature who does not assimilate with his society. Intellect must be kindled by contact with intellect, our heroism by the hero, our virtue by the society of the good, of those who are trained and organized in virtue, in systems of virtuous action, in virtuous thought, in virtuous careers, from whom we may catch the contagion of goodness as we catch contagions of the morbid process of diseases.

It is our duty then to seek the hero, the philanthropist in his mission, the philosopher in his progress, the woman in the flowering of her beauty—for the essence of her beauty, her charm, is virtue. As Mme. de Boigne wrote to Mme. Recamier (the most admired woman of her time), "I have told you a hundred times and thought it a thousand, that what makes you so seductive is your kindheartedness."—"This same goodness of heart has greater power than all your other more brilliant advantages."—"It is because you are so *good* that you have turned so many heads."

But the heroic, wise, and lovely are perhaps beyond our reach. They are too few in number to be the daily food of society, and perhaps ninety-nine in a hundred have passed away forever. But are they beyond our reach? Agnosticism says they have

passed into nonentity, or into the sphere of the unknowable. But is it so?

No! the wiser gnosticism of the noblest souls of all ages (whom the common herd do *blindly* follow in their faith) affirms that there is no passing away of anything but that transitory animal matter which is passing away every moment (a pound every day), and which passes away several times in the shortest life on earth. Ephemeral forms of matter pass, but the personal reality never passes away except as it enlarges its sphere of being to its supreme height. The historic conception remains for the Comptian agnostic, the everlasting reality for the philosopher.

And we may seek them! The entire constellation of genius, grandeur, and moral worth is for us, for the humblest mortals who seek, for they who seek shall find. Biography brings them to us and portraiture brings their earthly forms. They become our companions, our best friends, for they cannot harm us, they can only help to lift our lives to their own level. Agnosticism cannot deny the power of ideas and examples. Philosophy knows more and affirms the ever potent agency of the living soul. As the moon controls and elevates the ocean's waves, so is the radiance of heaven ever elevating the interior life of humanity. The same law determines the relation of human souls to the oversoul of the universe, and to the souls that have passed from mortal bodies.

To that radiance we open our souls when we dwell on the thoughts of the departed and when we give our days to the highest class of biography. Judicious biographical reading is, then, one of the most important means of moral education. Yet not biographical reading alone; reading the best thoughts of the best men and women of all ages—the saints, the heroes, and the true philosophers, whose truthfulness was shown in noble lives. Would that I had time to index for aspiring souls, to catalogue and describe the choicest reading. The evils of trashy literature are so great that parents cannot be too careful in its exclusion. The need of such an index or catalogue of the

useful is continually becoming greater. We are overwhelmed in a sea of literature. The *catalogue alone* of the publications in the British Museum would require forty years for its perusal if we read one volume a week.

How much of moral education and of high-toned biographical reading do we need to elevate the tone of society? Its selfish tone, its frivolity and *persiflage* which were so offensive to Hannah More were equally so to that earnest philosopher J. Stuart Mill, who says that after spending his youth considerably in France, "having so little experience of English life, and the few people I knew being mostly such as had public objects of a large and personally disinterested kind at heart, I was ignorant of *the low oral tone of what in England is called society;* the habit of not indeed professing, but taking for granted in every mode of implication that conduct is of course always directed to low and petty objects; the absence of high feelings which manifests itself by sneering depreciation of all demonstrations of them, and by general abstinence (except among a few of the stricter religionists) from professing any high principles of action at all, except in those preordained cases in which such profession is put on as part of the costume and formalities of the occasion."

Speaking of his friend, Mr. Austin, Mill says: "He had a strong distaste for the general meanness of English life, the absence of enlarged thoughts and unselfish desires, the low objects on which the faculties of all classes of the English are intent."

The elevated character formed by moral education will differ very widely from the common college product in many ways, especially in kind, prudent, and conservative sentiment. To destroy life, kill time, and scatter or squander the products of human toil, are the pleasures of the average collegian. To save life, to use every minute of time for a good purpose, and to conserve with religious care all the products of industry will be the pleasure of the morally educated.

Economy of expenditure which lies at the basis

of every virtue has long been treated as something degrading. The amount of personal expenditure represents the amount of selfishness, and no institution is in a healthy moral condition in which large personal expenditures are tolerated and encouraged. From a dollar and a half to two dollars a week will furnish an ample sufficiency of good, appropriate, and wholesome food.* A similar amount will furnish comfortable and respectable clothing and keep it in neat and cleanly condition. Two hundred dollars is therefore a liberal sum for these purposes, and a hundred more for room, fuel, and light ought to be sufficient. Three hundred dollars per capita is more than the majority of families expend who live by industry.

The report of the president and treasurer of Harvard shows that in that institution the smallest annual outlay of a student was $471, the largest $2500—the items of which, the president says, were all perfectly proper. The president commends $1365 as a proper sum, but says that the majority spend less than $850.

At Oxford $1500 is considered a minimum economical expenditure, and a considerable number spend $5000.

The expense at the Harvard Dining Hall Association was $3.90 per week.

Economy is a virtue peculiarly needed in America, since we are losing our national advantages—our vast wealth of productive land by our wasteful habits. We spend our wealth in wasteful ostentation, and we destroy its foundation by a reckless, wasteful agriculture which impoverishes the soil. Industrial education alone can teach us economy with our means and teach the farmer to economize the resources of his soil. With industry and economy a young man is sure to

* Col. Fitzgibbon, agent at London of the Canadian Government, having once failed to receive his remittance, was compelled to economize and lived upon sixpence a day for his food, and liked his diet so well that he continued the system long afterwards. A theological student in an Ohio college is said to have lived thirteen weeks on seven dollars.

succeed, without them he is sure to fail, and a vast number of our social failures is due to the absence of industrial moral education, which alone can impress economy.

There is no limit to the ultimate prosperity of a nation in which all live within their income and all needless ostentation is repressed; and there is no escape from the continual presence of poverty, degradation, misery, and crime, when all accumulations are destroyed by luxurious and ostentatious recklessness. The wanton waste of wealth is a *crime* so common and so thoughtlessly tolerated by moralists and pietists that great educational power should be exerted for its repression. Economy should be enforced through the whole course of education, and the spending money which a boy desires to control for himself he should be required to earn by useful labor.

How greatly do we need that ethical education which has a backbone of useful industry to teach the value of human life and of human labor, which expresses the power of sustaining human life when embodied in the products which we call capital or wealth. We need a proper reverence for that wealth which is life-power. To the profligate man accumulations of wealth (by human toil and privation) beyond his own wants are merely superfluities to be squandered, especially when they are found in a public treasury; and he destroys that wealth in lavish expenditure, ostentation, and corruption as freely and heartlessly as the western adventurer destroys the wild buffalo for sport, leaving Indian tribes that depend on hunting to suffer or starve. To drain the treasury is to lap the life-blood of a nation. A thousand dollars in a poor community potentially represents a life, and half that sum an education. To the wealthy the thousand dollars represents only a trifle of ostentation or amusement, and the wealthy generally control legislation.

It is difficult for the sacredness of public money, gathered largely from the earnings of the poor, to be realized by the selfish sensualist with brandy-deadened brain, or the capitalist to whom money is a plaything

or an instrument; and it is only by a prolonged course of morally educational industry, in which we balance our toil against the money it procures, that we can realize the relation of money to human life and the absolute duty of handling one as carefully or tenderly as the other. In India, when the money of the famine fund was seized to pay for a military invasion of Afghanistan, it was very clear that the waste in war of every fifty dollars was the destruction of one or more lives whom that amount would have saved from starvation. In the United States the relation of money to life is not so painfully close, but it still exists, and governmental profligacy is ever here a stern and cruel reality.

Nations are bled to the verge of death by the ostentation of governments and aristocracies, and in the State of New York its legislators are responsible for the vast amount of pauperism, ignorance, and crime which the thirteen millions wasted on the needless capitol building would have prevented. Wisely employed it might have established institutions which would have abolished nine tenths of the crime that now infests the state. But it is lost to humanity, and millions will be as vainly lost every year until moral education shall have enlightened public opinion.

There has been no public conscience in the college, the pulpit, the press, or the social circle to maintain these principles heretofore. Luxury is not only practised but defended, even from the pulpit, and the shallowest sort of ethical quackery has sanctioned every wasteful expenditure as a good thing for society. It is pleasant to find the just sentiment advanced today by Prof. Goldwin Smith: "I hold that the wealth of mankind is morally a common store; that we are morally bound to increase it as much, and to waste it as little, as we can"—a wise and pregnant sentence.

It requires a higher development of the moral nature to realize the cruelty of profligate waste than of the cruel acts in which our miseducated youth delight. "If I were a teacher in a school (said John Bright) I would make it a very important part of my business to impress every boy and girl with the duty of being

kind to all animals. It is impossible to say how much suffering there is in the world from the barbarity and unkindness which people show to what we call the inferior creatures."

The greatest delight of the average school-boy is to escape from his school and engage in hunting, which would not be attractive if his moral nature were properly cultivated. Hunting for sport is a relic of barbarism, an indulgence of fierce propensities that should be entirely prohibited. Prof. Jevons suggests that it is a small estimate to say that three million animals are painfully wounded or mangled annually in Great Britain. All of these have similar capacities to our own for suffering and pleasure, and many of them excel man in the strength of their affections. The wanton slaughter and torture of these, practised by many for the mere pleasure of shooting, differs from murder only in degree and stimulates the murderous impulse, as in the case of a Georgia boy who was aiming a gun at a robin. According to the newspaper statement,

> "A little girl begged him not to shoot the bird, and, when he would not desist, scared it away. The exasperated young hunter thereupon shot the girl."

The Germans are taking the proper view of this subject and the proper course of action. A convention of Associations for the Prevention of Cruelty to Animals was recently held at Gotha in Germany, in which the societies of eighty-four different cities were represented, and it was determined by the convention that instead of relying on penal laws against cruelty to animals they should adopt a general plan in co-operation with teachers for instilling sentiments of gentleness and humanity in youth.

One of the greatest duties of life is that of making wife and husband happy in their conjugal relation; from that sphere of domestic harmony and happiness come all the advancement and glory of future generations. The boy who has not learned to be courteous and affectionate to women is unfit for society. Hence

there is great advantage in co-education, which offers the opportunity of teaching boys habitual and unvarying courtesy to girls.

"The best husband I ever met (says Miss Mulock in her "Sermons out of Church") came out of a family where the mother, a most heroic, self-denying woman, laid down the absolute law, 'Girls first'—not in authority, but first to be thought of as to protection and tenderness. Consequently, the chivalrous care which these gentlemen were taught to show to their own sisters naturally extended itself to all women. They grew up true gentlemen—gentle men—generous, unexacting, courteous of speech, and kind of heart."

Some one to love is the first demand of generous natures, and some one to return our love is the need of all. The exercise of love maintains all our virtues fresh, fragrant, and buoyant. The reception of love enriches our life, removes all its clouds, and sustains us in every adversity, assists us to noble, heroic deeds, and to every duty. It is the crowning perfection and power of true Christianity to love and serve all around us with such energy and such sweetness of manners as to bring a returning harvest of esteem and love from all whose lives are not absorbed in self.

This manifestation of love is a matter of manners, but these manners are merely an expression of the inner life, as the light and heat of a candle are a manifestation of its combustion. We observe in the manners of a boy the presence or absence of the pleasing courtesies of a kind nature, as we observe that a lamp gives a bright or a dim light, and needs attention accordingly. But there is this difference, that before we have changed the interior condition of the boy we may do much by regulating his manners, for every act has a reflex influence. A polite and deferential manner elicits in some degree the polite and deferential sentiments from which it should spring. The actor always elicits in himself the sentiment which his part expresses. Hence a code of manners insensibly moulds the character into conformity with it in the individual who obeys the code, and at the same time the corresponding manners in others have

a similar effect. When boys are required to practise absolute politeness toward each other in all their intercourse they soon grow into friendly feelings which make that politeness spontaneous.

The code of manners in a school should therefore be of the very highest character—not exacting in ceremonials of a conventional nature, but imperative in demanding uniform kindness and suppressing every form of petulance, ill-temper, discourtesy, rude familiarity, and turbulence while demanding alacrity in serving and obliging others. All coarse familiarity should be checked by respectful forms of salutations and apologies for inadvertence, abruptness, or neglect.

Ill-trained children will need to be carefully practised in external manners to give them that grace which expresses refined sentiment and promotes its growth. They should be practised in bowing, shaking hands, walking in an orderly and graceful manner, giving precedence to others, rendering little services as opportunities occur, and making the salutations "good morning," "good evening," "are you well today?" "thank you," "can I assist you?" etc.

All this cultivation of manners proceeds with the greatest ease where the sexes are educated together; and the loving spirit which expresses itself in refined manners will always abound where song is a familiar daily enjoyment.

It cannot be too deeply impressed on the mind that education is fertile and successful in proportion as it is inspired by love, and barren of all beneficent results in proportion as love is absent. The teacher is himself the source of that loving influence, and his ability to win the love and esteem of his pupils should be considered his highest qualification.

The proper spirit of the teacher was well expressed by Mr. G. H. Davis of Philadelphia at a meeting of the State Teachers' Association, August, 1872:

"When I look down through their childish eyes, so full of truth, to the depth of their unsullied hearts, when I catch the merry prattle of their voices, or run my fingers through the curly ringlets of

their hair, when their tiny hand twines itself around my manlier finger, or I catch them in my arms that theirs may encircle my neck, when I romp with them in their childish glee, or soothe them in their childish sorrow, I love them, and I love them as I love my mother. I love my own first, best, and dearest, but I love others too, and I would rather go to my grave with a requiem sung by children's hearts, with children to weep tears and children to plant flowers, than amid the booming of guns, the half-masting of flags, and the solemn dirge of earth's heroes. . . . .

"Experience teaches me that sunshine is necessary to the blossom, the bloom, and the development of children. Look at those who live upon it and thrive upon it; what ruddy cheeks of health, what clear eyes, and how the laughter ripples out from their hearts brimfull of merriment. And this is true of the sunshine that sparkles in the tone and the deportment of the teacher, and he or she is the most successful in your proud vocation who carries on each succeeding morning to the class and to each and every scholar thereof a bright and smiling face and a happy heart. The most successful teacher, other requisites being equal, is he or she who is the brightest and cheeriest teacher, who rules the class by the law of love, and lives a life of sunshine."

CHAPTER VI.

RELATION OF ETHICAL TO RELIGIOUS EDUCATION.

The question of religious education.—Antagonism of false religion and false science, which embarrasses education.—Origin of false religion.—Similar origin of false science.—What is true religion?—Folly, limitations, and defects of dogmatic agnosticism.—Its harmony with animalism and with theological bigotry.—Shall we recognize the supernal in public schools?—Difference of true and pragmatic prayer.—Testimony of Cousin and Guizot.—Difficulties arising from bigotry.—Evils of irreligious education.—Failures of colleges and churches.—Great power of moral education.—Power of religion for the development of character, development of brain, and maintenance of health.—Power of physical culture.—Obedience to divine law brings every good, disobedience every evil.—Military example.—Future of moral education.

ONE of the most embarrassing questions to-day is whether religion shall be inculcated in schools, and whether the Bible shall be used for this purpose. Can the essentials of religion be harmonized with the freedom of reason and the authority of positive science?

It is evident that true religion and true science must harmonize, while false religion and false science may differ. How then are they falsified and placed in antagonism as they have been in the past and to a great extent at the present time?

Religion when grasped by the carnal or selfish mind is changed, reversed, or annihilated; for selfishness cannot comprehend love. Selfish, domineering intellect conceives religion merely as a system of government and set of dogmas which are to be enforced. It establishes a stern dogmatic theology, enforced by

terrible penalties, in which love, the essence of religion, is a mere form of words. Such theology, more antagonistic to the teachings of Jesus Christ than the heedless life of worldly pleasure, has been in conflict with science during the greater part of the history of the church, and has been slowly losing its power and surrendering every contested position, until to-day its total destruction by the power of science is only a question of time.

But as dogmatic theology goes down into extinction and true religion remains in its stead, the latter comes into conflict with debased science as science had before came into conflict with debased religion. The debasement of science comes from the same cause in human nature as the debasement of religion. The debasement of religion produced dogmatic theology (with despotism, torture, and dungeons in this life and infinite torture in the next), and the debasement of science by the animal nature produced pessimistic materialism, utterly blind to everything beyond the reach of the external senses and at war with all forms of religious thought and sentiment; therefore as hostile to true religion as to dogmatic bigotry, because true religion necessarily embraces a supernal element. The great conflict of to-day is the conflict of the scientific pessimism with all possible forms of religion, and this conflict necessarily arises in the school and college.

This debasement of science and religion is mainly dependent on individual character. One man under religious influences becomes a domineering and dogmatic bigot, while another of kindlier and nobler nature becomes a pious philanthropist. So in science one becomes a dogmatic, skeptical materialist, and another a generous-minded philosopher, open to all truth. But the power of education is such that when our colleges are filled with cold-blooded, selfish pessimists as teachers we shall have therefrom a supply of dogmatic bigots and of narrow-minded dogmatic agnostics, living in intense antagonism to each other. But if they are filled with men of noble, kindly, and ge-

nial natures, they will develop a true, unbigoted religion in the church, and an elevated philosophy in the sphere of science harmonizing with religion.

True philosophy appreciates and comprehends both religion and science, bringing them into harmony. *Such religion* and such science should be taught in colleges and schools, while dogmatic theology and agnostic science and philosophy should be excluded. It is the dogmatic creedal theology which rouses popular hostility by its arrogance, and it is a dictatorial agnosticism which disturbs and alarms the religious mind.

The true religion which is entitled to a place in all educational systems is that recognized and established by the Creator—established in the spiritual constitution of man—established in the form of a reverential love for the divine and holy, an all-embracing love for humanity, a glowing faith in all that is good, in the capacity and progress of humanity, in the divine wisdom and benevolence which are continually dawning on our minds in new truths, in the virtues and truth of our friends, and in our ultimate destiny. It is established in the sense of duty and strength of will which enable us to conquer all difficulties, and the spiritual faculties which realize inspiration and bring into our own souls an immortality enjoyed by our predecessors, thus lifting us into a sphere of thought and emotion, too firm too tranquil and strong to be disturbed in duty by the petty difficulties, temptations and annoyances of daily life.

The most resolute agnostic cannot object to the moral elevation of the religious character, though he may object to the convictions which naturally arise in such a character from its clearer and more exalted view of life. But the smaller class of dogmatic infidels (by which name we recognize, according to its etymology, men without faith, who reject human testimony to all beyond their own limited experience and assail as knaves and dupes all of much larger faith than themselves) are necessarily a disturbing element from their pragmatic meddling and scien-

tific bigotry.* And as pragmatic dogmatism is the same spirit, whether manifested in science, philosophy, or theology, it is not strange to find the domineering theologian generally co-operating with the dogmatic infidel in hostility to that philosophy which unites religion and science, and which in the spirit of the philosopher Herschel would hope all things not impossible and believe all things not unreasonable.

The Cartesian folly, that universal *doubt*, or in other words the dogmatic assertion of our own and others' ignorance, is the beginning of wisdom (while it is in fact the beginning of stolidity) is so gloomily prevalent among physical scientists as to constitute a formidable hindrance to the development of any comprehensive philosophy of the universe, any recognition of the divine, and any development of moral education which shall effectively enlist the higher emotions, the moral enthusiasm and grandeur of nature which exist in man, as they have been displayed for our benefit by the heroes, philanthropists, and saints of history.

Resolute justice, fidelity to engagements, courage, friendship, prudence, economy, temperance, self-control, patriotism, financial honesty, gratitude, unselfishness, and other virtues may coexist with dogmatic agnosticism but it is not compatible with the highest development of humanity. For it has not that calm refining and subduing influence which comes from the consciousness of something far above and beyond ourselves—that grand ideal which, if it were only an ideal, still guides and assists us as the model of beautiful form assists the sculptor, but which if it be the most actual of realities inspires us as the presence of a loving friend of nobler nature than ourselves; an influence from which the agnostic turns away in ignorance of its existence. But how can a modest and well-balanced being ignore all parentage, and say that

* This style of infidelity is vastly more prevalent among those who are not publicly known as infidels than among the few whose frankness and spirit of propagandism bring them into notice.

I with all my ignorance, my feebleness, and limitation am the grandest element of the universe; my intelligence is the highest intelligence that can exist in a universe that continually teaches us as infants of the kindergarten and holds out the promise of unlimited stores of knowledge and philosophy which seem at present beyond our utmost attainment in future with our present capacities.

The agnostic has no conception of the infinite possibilities (not yet explored) of the divine wisdom embodied in the universe, and therefore is not hospitably open to welcome new truths; nor has he any adequate conception of the dignity and future possibilities of humanity, and the goal to which its steps should be directed.

No victor's crown appears to await the agnostic after the battle of life is well fought, and therefore he cannot afford to be defeated with the right when he can be triumphant with the wrong.

There is no sunshine breaking through the clouds of his sky from a higher realm. Discord and slander, disease and want, war and crime, misery, melancholy, and insanity surround as a present and unchanging reality, tinging his life with that pessimism which deadens his better impulses and which to many suggests suicide as a probable relief.

To him the present has an overmastering importance, and the love which should accompany his whole life is suddenly torn from him by death, leaving a gloom which paralyzes his nature for a longer time as it was dearer to him; and in like manner he continually encounters gloomy tragedies in consequence of his limited views of life, which would be neither very gloomy nor very tragic if he enjoyed the illumination of a higher knowledge. The grand failures of the agnostic in the wise and happy guidance of life (which will be fully set forth in my anthropological writings) are such that the agnostic influence over education may be classed among social calamities.

There is a combination of modesty, spiritual refinement, impressibility to truth, spiritual brightness, en-

thusiasm, hope, and serenity which belongs to the truly religious nature which the agnostic never attains.

To him there is no conscious communion with departed friends, no consciousness of any divine or angelic influence in exalted moments; the fountains of inspiration are not for him; all the moral grandeur of the past is but a tombstone association, and all prayer is but a superstitious ceremony.

The basic defect of agnosticism is the same as that of theological bigotry—the narrowness of mind which rejects all beyond and above the conceptions in which we have been educated so stubbornly as to refuse to accept the most credible evidence.

The rare and curious events in which the great hidden powers of the universe are manifested and a flood of light thrown upon nature's mysteries would be utterly lost upon such scientists; for if the immediate observer were willing to observe and competent to describe without suppressing the facts that were apparent he would be as incapable (if he were willing) of transferring the knowledge to brother scientists of the faithless class as a group of horses on South American pampas would be unable to transfer a knowledge of an eclipse visible in the southern hemisphere to a herd of horses on the prairies of New Mexico. The paralysis of rational faith renders it impossible that the faithless scientist should know anything beyond the familiar physical occurrences which are universal, and has the same paralyzing power against the philosophy which would comprehend the universe as the faithless rejection of rare and curious fossils would exercise in paralyzing the highest development of geology.

The paralyzing influence of a materialistic teacher upon the higher faculties of the mind is largely due to the fact that he works in accord with that animalism which is the basis of an energetic character, and which exists in riotous strength in the youth not yet trained into modesty, gentleness, forbearance, and refinement, who would prefer a pugilistic or base ball contest to

any intellectual pleasure. It was easy to perpetuate moral debasement at Rome in the days of the Cæsars by the brutal floggings which boys received at school and the bloody gladiatorial spectacles at the amphitheatre. It is easy to prolong the reign of animalism in America by excluding all thoughts of a divine power to whom reverence is due, and by ignoring human testimony as worthless, teaching the pupil to to rely on his own senses and *physical* demonstrations alone, which necessarily excludes every spiritual or religious fact ancient or modern.

Nor is the influence of the narrow mind any better when it occupies the theological field.

"Let those men (says President McCosh) in addition be narrow and censorious; let them be forever denouncing Pantheism, Materialism, Darwinism, and all sorts of heresies of which they know little, and we venture to predict that in a few years they will make the better half of the college doubters or open skeptics. We know colleges both in the old world and the new where zealous patrons have secured this end as effectively as if they had been in the pay of the enemy."

When we rise above the limitations of both sensuous and creedal dogmatism we find one essential religion for all nations, a religion more perfectly presented by Jesus than by any other leader of mankind, a religion that adores the infinite Father, loves the unlimited brotherhood of humanity, and clings to the ascended humanity of past ages which inspires the humanity of to-day, a religion of love, aspiration, and labor, to which the agnostic can have no great objection in its results.

It is scarcely possible to do justice to the religious sentiments without a distinct recognition of the spiritual truths which agnosticism rejects. But it is not necessary to present these truths in a dogmatic or coercive manner. We may allude to the Deity as generally recognized by mankind while stating candidly that many consider the supreme power an unknowable mystery, and we may, when referring to the future life as a matter of general belief, speak respectfully of the fact that a number of intelligent persons regard

that also as beyond our knowledge. So much of deference may be due in public schools to the sentiments of agnostic parents, if such there be, but the time is not very remote when the agnostic denial of a future life will disappear from intelligent and respectable society, and the doctrine that the ultimate governing power of the universe is spiritual will be universally recognized as a philosophic truth.

But the culture of the religious nature depends much less on any doctrinal statement than on the power of song and the silent influence of the teacher's character. A deeply reverent man will diffuse a religious influence around him without ever stating a religious proposition. Every tender, loving, reverent emotion is a religious exercise and develops the religious nature.

The admissibility of prayer as a school exercise has been greatly diminished by the degradation of prayer in the ministrations of theologians. Loquacity, which might be called one of our American vices, is the antagonist of reverence. It is an arrogant attempt to impose our personality on others and compel them to listen to our thoughts, whether they are worth listening to or not.

The introduction of pragmatic loquacity in a prayer is a desecration and destruction of its true purpose. The deepest reverence is silent; and secret, silent prayer was therefore recommended by Jesus. Speech is in some degree a disturbance of that reverence, but perhaps a trained habit of speech may become associated with deeply reverent sentiments, and hence it is not impossible that public prayer may be truly reverent, but in fact it seldom is. The average prayer is a familiar and almost insolent demand for the gratification of our wishes, an expression of creedal theories, of likes and dislikes, a discussion of miscellaneous topics, and an insincere self-abasement. A true prayer is calm, reverent, subdued in manner, *brief in speech*, and neither familiar nor beggarly, but expressive of aspiration to the divine life, loyalty of purpose, and grandeur of sentiment.

The mind aspiring to the divine rises above all pettiness in the realm of all-comprehending love and heroic earnestness; such should be as far as possible our habitual mood, and prayer is its reënforcement, by turning away from the little things which lower our life to the infinite greatness and love which elevate it and establish or confirm the religious habits of thought and life.

Ample experience attests the value of religion in education. VICTOR COUSIN, after being employed by his government to examine the schools of Europe, said:

"Religion is in my eyes the best, perhaps the only basis of popular education. I know something of Europe, and never have I seen good schools where the spirit of Christian charity was wanting. Primary instruction flourishes in three countries, Holland, Scotland, and Germany. In all it is profoundly religious. In France, with few exceptions, our best schools for the poor are those of the 'Brothers of the Christian Doctrine.'"

M. Guizot, when Minister of Public Instruction, said in an address to the pupils of the normal schools:

"Among the objects of instruction there is one which demands from me particular notice, or rather the law itself, in placing it at the head of all others, has committed it especially to our zeal; I mean *moral and religious instruction.* It is absolutely necessary that popular instruction should not be addressed to the understanding only; it must *embrace the whole soul,* and especially must it awaken the moral conscience which ought to be educated and strengthened in proportion as the mind is developed."

It will not be possible to introduce religious education in American schools unless the friends of religion shall be sufficiently enlightened to realize that theology is not religion, and has no essential connection with that which Jesus Christ presented as the summary of all his teachings—unlimited love. That so-called religious teaching which, as Prof. Corrson has well said, "is too often a systematic narrowing of the mind, and a systematic deadening of the religious sentiment," has created so jealous a prejudice against religious teaching that it can never be tolerated in public schools unless it conforms to that pure ideal of

Christ which has never ceased to be loved and admired by mankind. Every good sentiment which can be imparted is a portion of that pure ideal to which no one can properly object, however resolute his hostility against creedal bigotry.

An education which does not embrace the religious view of the universe not only weakens the moral faculties by inanition and deprives them of their richest food, but weakens the intellect by accustoming the mind to feeble and superficial conceptions which neither embrace the true plan of the universe nor the nature and history of man, nor furnish the grand impelling and inspiring motives which arise from the full realization of God and humanity. Those universities, especially European, which are dominated in one instance by the speculative emptiness of Hegelianism, in another by the contracted ideas of positivism, and in another by the crass materialism of Moleschott and Buchner exert in a minor degree the same deadening influence on human progress and education as the Aristotelianism of the dark ages, for their errors are not simply errors of speculative thought. Their erroneous speculations are based upon erroneous sentiment, upon ethical defects of character, which display themselves in defective modes of thought as other basic errors in character display themselves in despotic doctrines and the maintenance of despotic governments, while other moral defects result in social anarchy. Falsity in character brings falsity in opinion and in action.

Whether the irreligious education be dominated by the short-sighted views of merely physical science, or by the purposeless abstractions of metaphysics which grasp neither physical nor spiritual science, it fails to furnish some of the requisites of a noble manhood and a tender and beautiful womanhood which is nourished by every system of spiritual and earnest religion however it may be alloyed by ignorant superstition. When it was recently proposed by the French authorities to replace the Sisters of Mercy who act as nurses in the hospitals by lay female assistants, the proposition was warmly opposed by men of all various political and

religious sentiments, because they knew that nowhere would be found outside of religious influence the devotion and fidelity, the tenderness and self-denial of these humble devotees. Even Hume, *it is said*, when asked by a lady whether he would prefer to select for a confidential domestic one believing his own principles or one believing in religion, confessed that he would prefer the latter.

The physical scientist has a solid foundation on which a grand superstructure may be erected, but the mere metaphysician understands neither the lower nor the upper world. To him may well be applied the rebuke which was said to have been addressed by a venerable Christian to Justin Martyr when he was enamoured of Platonic philosophy and supposed that in it he had found the road to the highest wisdom:

"You are a mere dealer in words, but no lover of action and truth; your aim is not to be a practiser of good, but a clever disputant, a cunning sophist."

He profited by the rebuke and became a Christian philosopher.

When the education which has been controlled by the dead languages and mathematics is enlarged by the addition of the physical sciences it becomes more substantial, but no more ennobling to the soul, and but little more expansive to the reason. Such an education is fit only for the life of selfish ambition.

The colleges have never furnished the training which would fit men for a higher life than our present social condition, or stimulate or create a longing for such a life. And the church, though it may be a bulwark against social degeneracy, is so imbedded in and identified with the national character in each country that we cannot look to it for any great forward movement or absolute conquest of social evils. Fifteen centuries of power have tested its capacity and the results are not encouraging.

The church deals with the adult, confirmed in habits, to modify but not revolutionize his character. Moral education deals with the child and does revolu-

tionize his character. That in which churches and schools have failed for thousands of years is now seen to be entirely practicable by moral education, and hence we may say that its efficient introduction will be the most important measure for mankind that has ever been proposed, a change far greater than any prior change from savage to civilized life, making a broad contrast between the future and the past.

The moral education which has sustained society heretofore has been chiefly derived from the mother in the tender period of childhood; but more powerful even than the mother's influence will be the school of moral education in its multiform influences and surroundings, the inspiring influence of music, the controlling power of the teacher's mind and voice, the ever-present influences of companionship, and the unanimous sentiments of the juvenile multitude in their progress to a higher development making a social power which assimilates all who come within its reach.

There are few who realize the power of religious education, the energy with which the religious or the leading sentiment of the moral nature inspires all our faculties, sustains the energy of the brain, brightens the soul, and sustains the moral and physical health. It would carry us into too large a field of science and philosophy to attempt a demonstration of this.

As certainly as we can develop the lower can we develop the higher elements of humanity. It is no more difficult with proper means and methods to develop saints than to develop sots and assassins, no more difficult to develop the brain than to develop the muscles, though the development may be more apparent in its powers than in its growth or structure. The casts of heads taken by Deville of London at different periods of life gave definite proof of the growth of the brain in the portions that were cultivated, and every gymnasium yields evidence of bodily development by culture. The exact statements of Prof. Maclaren are worth quoting to show the absolute power of training:

"Some years ago twelve non-commissioned officers, selected from all branches of the service, were sent to him to qualify as instructors for the British army. They ranged between 19 and 29 years of age, between 5 feet 5 inches and 6 feet in height, between 128 pounds and 174 pounds in weight. He carefully registered the measurements of each at the start, and at different times throughout their progress. The muscular additions to the arms and shoulders and the expansion of the chest were so great as to have absolutely a ludicrous and embarrassing result; for before the fourth month several of the men could not get into their uniforms, jackets, and tunics without assistance; and when they had got them on, they could not get them to meet down the middle by a hand's breadth. In a month more they could not get into them at all, and new clothing had to be procured, pending the arrival of which the men had to go to and from the gymnasium in their great coats. One of these men gained five inches in actual girth of chest. . . .

"Of these twelve men, in less than eight months every one gained perceptibly in height; indeed, there was an average gain of five-twelfths of an inch in height, though all, save one, were over twenty; and one man who gained half an inch was twenty-eight years old, while one twenty-six gained five-eighths of an inch. All increased decidedly in weight, the smallest gain being 5 pounds, the average 10 pounds. . . . It is not likely there was much fat about them, as they had so much vigorous muscular exercise. Every man's chest enlarged decidedly, the smallest gain being a whole inch in the four months, the average being 2¾ inches, and one, though twenty-four years old, actually gained five inches, or over an inch a month. Every upper arm increased one inch, most of them more than that, and one 1¾ inches."

The parallel experience in cerebral and psychic changes is as decisive and frequent as in the muscular system. The conversion of debased sots and social outlaws into good citizens by religious inspiration has everywhere accompanied the active progress of the church, and it is now being shown every day in houses for inebriate reformation that religion may become the savior of the drunkard when all other means have failed.

A strong religious inspiration so grandly exalts the powers of soul and body as to carry men successfully through the greatest difficulties, and the demonstration has been in progress for many years at Dansville, New York, in the institution of Dr. J. C. Jackson, that men may sometimes be lifted by religion above the plane of disease, and that religion is in such cases

a more powerful hygienic agency than anything known to the medical profession.

Intemperance, indolence, pauperism, disease, and crime, all vanish before the divine agency of religion, and when education shall become truly and profoundly religious we shall have a new world in which, with nobler races of fully developed men, liberty, prosperity, and universal happiness will be assured.

That the ethical power is the essential element of eternal life is absolutely certain, and that in proportion as that element declines the debasement tends toward extinction or death is clear to all comprehensive thinkers. It is a natural and truthful inference that the ethical is the true vitalizing and antiseptic element, amid the moral and physical decay and putrefaction of earth life. Hence the ethical superiority of woman is the prevalent cause of her superior longevity. According to recent statistics Italy has 141 male and 241 female centenarians; Austria has 183 male and 229 female centenarians, also 42,528 males above ninety and 60,303 females.

The nearer we come to God, or, in other words, the more perfectly we obey the divine law, the more completely are we relieved from every evil that belongs to human life, and thus the law is demonstrated in its rewards and punishments. As under Dr. Jackson's guidance men conquer their physical infirmities, and as in past times the saints and martyrs have been sustained with marvellous power, so on the other hand do we see that "the wages of sin is death" in every profligate population, in every degenerating nation, and especially in that service of evil which arrays itself against the divine laws—the service of homicide, commonly called military service—which is everywhere attended by excessive mortality. The mortality in the Russian army, usually 38 annually in the thousand, is twice what it should be in the entire mass of the community and almost four times as great as among persons of the same ages in peaceful occupations. The mortality of British soldiers compared with that of civilians of similar ages is shown by Balfour to be

almost twice as great, and in warm climates has been from three to four times as great. Of course in the actual campaigns, when life becomes most infernal, the mortality is beyond computation; but the fact is to be observed that not more than one-fifth of the deaths are caused by the wounds of battle under favorable circumstances, and that in many campaigns the deaths by disease are from nine-tenths to nineteen-twentieths of all.

The most debasing of all disorders, the venereal disease, prevails extensively in armies, as it does in all profligate populations.

The supreme wretchedness of military life is such that men die by their own hands with fearful frequency; it is safe to say three times as frequently as in civil life, for in Austria the ratio of military suicides is six times as great. Truly "the wages of sin is death," while the reward of a life in perfect accord with divine law is found in abounding joy and overflowing health, making the daily life of the good man a daily beneficent influence to all around him. Into that life the first generation morally educated will enter, and the second generation may realize its wealth of development and happiness.

CHAPTER VII.

THE RELATIONS OF ETHICAL TO INTELLECTUAL EDUCATION.

Intellectual development, power and progress, dependent on the ethical.—The human soul is above the material; to comprehend it we must reach the ethical or spiritual sphere of thought.—Four elements of humanity, the divine or ethical, the intellectual, the executive, and the animal; the intellectual the least important.—Each element occupies a different region of the brain and has different physical effects.—All educational processes should be pleasant, whereby they improve the ethical tendencies.—The law of pleasure should be a paramount law in education.—The ethical elements, both the genial and the heroic, are essential in education, literature, and philosophy.—Depressing education, false opinions, dogmatism, and loquacity result from their absence.—Increase of knowledge and discovery depend on the ethical.—A stolid conservatism arises from its absence; examples: injurious effects of the fatiguing system of education on mind and body; the high moral development of the teacher the basis of ethical education; this leads directly to oral and illustrative teaching.—Summary of principles.

THE neglect of moral education heretofore has had a deadly influence upon intellectual culture, for moral energy is essential to intellectual power. Moral energy *rouses the entire brain*, and thus furnishes the capital which may be expended in intellectual effort, while *purely intellectual* effort not only exhausts the general vitality of the body (which has been so universally the tendency of schools and colleges heretofore, as to furnish an argument against the higher female education), but impairs the tone of the brain, impairs the manliness and womanliness of the character, impairs the moral energies, and thus, by taking away its psychic and physiological foundations, ultimately impairs the intellect itself, as we see in the feebleness of the book-

worm as contrasted with the politician and statesman. It is as difficult to sustain the intellectual without the moral power, as to sustain the circulation of the blood without the digestion of food.*

This becomes quite obvious when we consider the elements of moral power, and their influence upon the brain and body. These elements are chiefly Firmness or Will, Perseverance, Dignity or Self-respect, Moral Ambition, Sense of Honor, Heroism, Conscience or Fidelity to Duty, Energy and Industry, Hope, Cheerfulness, Love, Devotion, Friendship, Benevolence, Sympathy, Faith, Love of Truth or Sincerity, Spirituality and Reverence.

It is obvious that without these powers man can do nothing effectively, either with his intellect or with any other power above the level of passion, sensuality, despair and crime. He cannot concentrate his mind, he cannot study, he cannot persist in any course, and he cannot think with sufficient vigor to profit by any opportunities. He is but a bundle of disorderly and ruinous propensities, going on necessarily in intemperate sensuality and profligate crime to disease, despair, insanity and suicide, or the penal death of a criminal.

On the other hand, if endowed with all these powers in an eminent degree, he will pursue with diligence, perseverance and enthusiasm the path of intellectual and social progress and elevation, and even with that mediocre intellectual capacity which makes the attain-

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* "We are utterly, grossly wrong in attempting to increase the vigor of the mind *by incessant intellectual effort.* Many of our students not only strain the nerves in this manner beyond the power of healthy action, but leave the best feelings of the heart to languish and die for want of opportunity to act; and then fastidiously or *philosophically*, as they would have it, despise those finer, warmer emotions of which they are no longer susceptible. We cannot but pity the man who has thus *buried the better half of his nature.* . . . We pity him still more when he has sacrificed health itself to these excessive efforts."—*Annals of Education.*

The sacrifice of virtue and the sacrifice of health go together—the manly virtues are connected with health. The loss of health is the loss of moral as well as physical power for all duties.

ment of knowledge difficult, and prevents the winning of college honors, he is sure to win the honors of life, and surpass men of greater intellectual endowment and collegiate success, but of less nobility of character.

If, therefore, the collegiate life develops this nobility of character, it insures a present and permanent intellectual success, while if it does little or nothing to develop these noble qualities, it cannot be intellectually successful; and if, still worse, it encourages by evil associations a low tone of principle, and represses the genial emotions by the cold, distant, and unfeeling deportment of professors in which selfishness is the supreme element, it inflicts a permanent injury * upon the intellectual and moral life of the pupils, rendering it probable that even the most gifted will achieve nothing for the intellectual progress of society unless from selfish motives. Locke perceived this evil so clearly as to prefer a private tutorship to a collegiate education. He says:

"Till you can find a school wherein it is possible for the master to look after the manners of his scholars, and can show as great effects of his care of forming their minds to virtue, and their carriage to good breeding, as of forming their tongues to the learned languages, you must confess that you have a strange value for words, when, preferring the languages of the ancient Greeks and Romans to that which made them such brave men, you think it worth while to hazard your son's innocence for a little Greek and Latin. For as for that boldness and spirit which lads get amongst their playfellows at school, it has ordinarily such a mixture of rudeness and ill-timed confidence that those misbecoming and disingenuous ways of shifting in the world must be unlearned, and all tincture washed out again, to make way for better principles, and such manners as make a trustworthy man. He that considers how diametrically opposite the skill of living well and managing as a man should do his affairs in the world, is to that malapertness, trickery, or violence learnt amongst school-boys, will think

* "To the question we have often asked, 'Do the best-informed parents you know consider it safe to send their children to the common schools?' the answer is *almost uniformly in the negative*, and we received this reply from one gentleman who had visited personally one hundred schools in one of the New England States: 'Many of our schools have become nurseries of vice.'"—*Annals of Education*, 1835.

the faults of a private education infinitely to be preferred to such improvements, and will take care to preserve his child's innocence and modesty at home, as being more of kin and more in the way of those qualities which make a useful and able man."

That moral development or culture is the necessary basis of all progress was well illustrated by Prof. Seelye, in advocating the claims of missions, saying:

"A moral and spiritual awakening must precede the intellectual. Men merged in sensualism, argues Plato in the "Sophist," must be improved before they can be instructed. Only as they become morally better can they become intellectually elevated and enlarged. There is here a deep truth of human nature and of history, which if well considered would settle this whole question. Men must be improved in order to be educated. Education follows as surely a moral improvement as flowers open to the sunlight. But education is as *powerless to secure that improvement* as is the plant the light and warmth by which it is quickened. [Observe how absolutely Prof. Seelye, like other collegians, limits his conception of education to intellectual culture—a culture destitute of all elevating power.] As far as we can trace it historically a nation's intellectual progress has always followed, never preceded, some new moral or spiritual impulse. . . . It is religion, and not science or philosophy, which gives the inspiration to art and the living soul to genius. This truth, that the culture of the sentiments must precede that of thought, and that the thoughts of the intellect will be lofty as the sentiments of the heart are profound, is not now seen for the first time. Plato, Aristotle, and Bacon have expressed the same thing." "If therefore we begin our attempts to improve men through the instruction of their intellect, we shall end where we begin, having blown a bubble which bursts as soon as blown. [This is true of a *purely intellectual* education, but school education is generally accompanied by some moral influences. It cultivates patience, self-control, respect for authority, and such moral qualities as are incidentally stimulated by the example and voice of the teacher.] No amount of intelligence ever saved any people, and the most costly educational system is consistent with and sometimes actually found in the most corrupt social state."

The paramount importance of moral as the basis of intellectual culture may be sustained by a few quotations from eminent writers* who have had a momentary or accidental glimpse of this truth, but the practical

* Montaigne says: "We only toil and labor to stuff the memory, and in the mean time leave *the conscience* and the *understanding* impoverished and void."

drift of the literature of ages has been in an opposite direction. Philosophizers have delighted in the intellectual as the chief field of human improvement, and Socrates devoted his time to dialectic discussion, under the impression that erroneous conduct was the result of ignorance, and that virtue would be the necessary consequence of knowledge.

In this we see the vast superiority of the religious teachers to the speculative philosophizers—the former basing human improvement on the ethical and the latter on the intellectual powers—the former being guided by a deeper insight or intuition. The comparison between Jesus Christ and Socrates is almost a contrast. The former established a religious movement which has changed the destiny of civilized nations; the latter, through his pupils Plato and Aristotle, and their followers, introduced the most barren system of chaffy speculation that has ever beclouded the human mind, the evil effects of which pervade our collegiate system of to-day. The practical superiority of Jesus over the other great Oriental teachers was shown in giving his whole attention to the ethical, discarding metaphysical speculation, external formulæ, and prior authority to develop the divine principle of Love, and bring man into relation with its divine source, the Heavenly Father of all. To this great source go the most highly developed souls, and from the higher realms of eternal life they draw an inspiration which gives to human life an elevation, power, beauty and illumination which remove all its evils.

The intellect which deals only in the material externals recognized by perception and handled by the practical energies, is capable of dealing efficiently with matter, but not with *man*, who is something above and beyond matter—a permanent spiritual power for eternity, whose nature, destiny, and law of development can be understood only by those who comprehend the divine spiritual power embodied in his constitution, and who realize that the development of that divine element above its clogs and hindrances is the great

problem of human progress, in the solution of which all other problems are solved.

Principles or sentiments are associated with truths, and the loftiest sentiments bring us up to the comprehension of the loftiest and most far-reaching truths. There is no adequate comprehension of man, his life, his destiny, his faculties and their future evolution or normal education, except in that ethical sphere of thought which is above the material, which is in the light of immortality and disinterested love. I do not say that sentiment alone gives wisdom, but that wisdom cannot exist *on a low plane of sentiment* any more than a hyena can comprehend human society. A few words spoken in ancient times from the high sphere of which I speak are sacred to humanity to-day, while myriads of volumes filled with intellectual activities on a lower plane are entirely dead; and much of what is highly intellectual to-day must die also, because it is shallow and false as are all things below the normal plane of humanity. In that higher sphere of consciousness, all things are delightful and pure—partaking of perfection and eternity—hence its expression is ever sweet and strong and graceful, and moves with ease in the harmonious flow of poetry, which comes to the poet in his moments of ecstasy, when he seems to breathe the atmosphere of heaven, and which flows unbidden from lips that move with inspiration.

"Poetry (said a great poet) is indeed something divine. It is at once the centre and circumference of knowledge, it is that which comprehends all science and that to which all science must be referred. It is at the same time the root and blossom of all other systems of thought. It is that from which all spring, and that which adorns all, and that which if blighted denies the fruit and seed, and withholds from the barren world the nourishment and the succession of the cions of the Tree of Life. . . . What were the scenery of this beautiful universe which we inhabit, what were our consolations on this side of the grave, and what were our aspirations beyond it, if poetry did not descend to bring light and fire from those eternal regions where the owl-winged faculty of calculation dare not even soar?"

In this striking passage the word poetry is used with "poetic license," to express all of which poetry

is the most pleasing expression. But that atmosphere of heaven, in breathing which men speak as angels and think in accordance with divine wisdom, was not for poets alone in the past, the present or the future, and has not been restricted to poetic forms in its conveyance to mankind. It inspires alike the prophet, the religious teacher, the martyr-hero, and the philosopher who reveals the divine wisdom in its relation to human life. And while science among the boulders and glaciers needs nothing but their forms for its inspiration, it enters a different field entirely when it comes up to man, in which sphere it is a presumptuous intruder unless it be washed from the soiling of earthly animalism and arrayed in the reverence and love which are the raiment of philosophy, and without which there is no true comprehension of man or of God, and no capacity to comprehend and guide the evolution of humanity in its Godward progress—WHICH IS EDUCATION.

The world's mistake for ages has been the mistake of infancy and ignorance—seeing only the most apparent and superficial things, neglecting all that lies beyond the surface.

As the soul holds its intercourse with all things by the intellectual faculties and external senses, they have attracted universal attention, and the mysterious moving powers which constitute the real character and life of all psychic being have been neglected, overlooked, or unknown.

Psychology, from Plato to the beginning of the present century, has been almost exclusively a consideration of the cogitative faculties instead of the controlling elements of humanity, and even the sturdy protest of Reid has not abolished this sciolism.

Education has been based upon the same superficial conception, dealing only with the external or intellectual manifestations, and has less of the ethical and physical to-day than it had among the Greeks.

When we grasp the entire nature of man, we perceive that in addition to the external intellect which is akin to the senses, he has a spiritual, religious, or

ethical nature, which partakes of the divine and is akin to the heavenly life, which is the seat of his happiness, the means by which he imparts happiness to others, and is the vitalizing element of his own life as well as the fountain of life and happiness to all—for the divine benignity flows out to all men through the heavenly elements of the human soul, of which the divine is the indwelling principle. This is, indeed, the life and light of humanity, without which all would soon be extinguished in the blackness of night and nonentity.

In addition to this beneficent and illuminating power, which all other powers serve, and which is the very end and aim of human existence, we have certain practical moving ambitions and executive impulses, by which all results are achieved, and a certain physiological apparatus for its use.

These four elements of humanity—the intellectual, the divine, the executive, and the animal—all need the culture of a true education, but the divine, or ethical, is the pre-eminent element, for which the others were created as its servants; and though all four elements are essentially necessary, the ethical is the most necessary, the most important, and the one which we can least afford to neglect. Therefore ethical education is the supreme need of humanity, and is the object to which all schools and colleges should be devoted, since it is the ethical education of the individual which fixes his true rank in the innumerable spheres of God's universe.

This has been clearly perceived by all really great sages and saints, and above all was it realized and perceived by Jesus Christ, though very few of his followers have realized it as he did, and church organizations, busy with external ceremonial, have in former times been often as destitute of the divine elements as the colleges and governments. It illuminates and assists our conceptions when we discover that each of these four elements to be educated has its own special territory in the nervous matter of the body which contains all its psychic and vital powers; not a cir-

cumscribed and isolated territory for each (for human faculties are commingled in action), but a definite region. The intellectual capacities belong to the front lobe of the brain in its frontal and lateral aspects, and to the anterior inferior part of the middle lobe.

The ethical capacities occupy, as they should, the entire superior surface of the brain, blending on each side with the subordinate powers. The executive powers occupy the occipital region generally, and blend above in noble and strong impulses with the ethical—below with the physiological powers which control the body and occupy the base of the brain. These things I know by innumerable experiments, observations, and personal experience and consciousness, as well as I know any scientific fact, and have often demonstrated by experiment more than is here asserted.

The position of the intellectual and moral powers in the brain renders it certain that the moral sustain the intellectual, for the superior organs of the brain determine the circulation upwards and thus invigorate the whole brain, while the frontal organs have no such tendency, but rather relax the force of the circulation and the energy of the temperament. This statement I must be allowed to make *ex cathedra* as a cerebral physiologist, for I do not propose in this volume to discuss any question of cerebral physiology. Its truth, however, will readily be recognized when we substitute for the cerebral organs the faculties which they manifest, which belong to the spiritual nature. No one will deny that hope, firmness, fortitude, decision, industry, enthusiasm and religious sentiment are qualities that invigorate the mind, and that mere intellectual exertion, unless sustained by these qualities, is exhaustive or debilitating.

Hence the moral nature and upper part of the brain are essential to intellectual energy and success, and he is the most successful teacher who can inspire the greatest enthusiasm and earnestness, while any system of education which has no pleasure or enthusiasm in the pupil and no affection for his teacher or interest in his studies, must be a failure.

I would not assert, however, that the common intellectual education has no moral power, for there is no purely intellectual education. Every school must necessarily enforce a certain degree of self-control, obedience, diligence, tranquillity, fidelity, and sense of duty, which gradually subdue the animal passions and produce an externally moral deportment. The common-school education certainly appears to diminish crime. The major part of the crime in the New England States proceeds from that small portion of the population (about 7 per cent) which is illiterate. It may be because the illiterate become vicious, or because the degraded and vicious grow up illiterate. Profligacy and degradation cause a neglect of education, and the neglect of education increases profligacy. It is said that 95 per cent of those arrested for crime in France during the twelve years ending in 1879, were of the illiterate classes.

Regarding the culture of the ethical as the supreme purpose of education, I have already explained the chief method of culture by the voice of the pupil and the teacher, according to the law that sound controls the emotions. There are also two other important and greatly neglected laws—the law of pleasure and the law of action—laws upon which our educational systems have long been trampling, and which require a revolution in educational methods.

1st. As to the LAW OF PLEASURE.—Pleasure and pain are the Divine instrumentalities for guiding and governing mankind. Pain is the inevitable punishment which arrests us in wrong-doing, warns us of error, and compels us to desist. Inflicted by Divine ordination (the laws of nature) it is unquestionably a Divine monition as to the laws that are to be obeyed. It punishes us for injuring our bodies, and compels us to take care of them. It punishes all violations of the law of health, and all neglect of duties. In violating the law of the Divine life, the ethical element, we are punished by the hostility of our fellows, and by our debasement, remorse, and loss of happiness. In violating the laws of the practical energies we are

punished by mortifying failures, loss or disaster. In violating the law of the intellectual nature we are punished by ignorance and mental obfuscation, leading to falsities and calamity.

The whole history of the world is a history of calamities produced by violated laws. War, pestilence, crime, poverty and insanity have scourged all nations in the past and present, and will continue to scourge them until the Divine laws are obeyed.

The LAW OF PLEASURE is this, that the normal and beneficent exercise of all our faculties shall be pleasant—the abnormal and injurious, unpleasant or painful. The pleasure or happiness resulting from normal action of the faculties generally, *invigorates the ethical faculties*, the nature of which is to enjoy and to diffuse happiness. The disturbance, unhappiness or pain resulting from violating the laws of the faculties, oppresses the ethical nature which is all brightness and joy, and stimulates the anti-ethical, gloomy and evil impulses which debase the entire character. Harsh and cruel treatment stimulates every evil element in our nature and overpowers the good, but happiness produces a bright elevated condition of the soul and a desire and capacity to diffuse the same happy condition to others.

The normal exercise of the intellectual faculties is delightful, and by this delightful influence invigorates the ethical nature as well as the intellectual powers. It is therefore an essential matter in ethical education that all intellectual instruction should be *agreeable or interesting*, and should not be fatiguing, disgusting, or painful. Repulsive tasks enforced with tyrannical harshness are positively demoralizing, and would counteract the effect of ethical instruction. The poet Wordsworth recognized this association between pleasure and intellectual progress. He said, "We have no knowledge, that is, no general principles drawn from the contemplation of particular facts, but what has been built up by pleasure, and exists in us by pleasure alone. The man of science, the chemist and mathematician, whatever difficulties and disgusts

they may have had to struggle with, know and feel this."

It is this pleasing exercise, this reception of love and wisdom, which nourishes and builds up the brain as man's whole life is nourished and sustained by the Divine influx into his interior. Wretched is the fate of children to whom no love is given; their moral nature is utterly starved and their character for life debased, as we may see in their expressionless faces—a degradation similar to that which comes from the lack of nourishment for the body. Prof. Baldwin, a commissioner who investigated this subject in Ireland, says:

"For many years I have had abundant opportunities of seeing how the want of food and clothing affects the attendance of scholars in the schools of this country. I have myself observed again and again the fearful physiological effects which result to adults from indifferent sustenance in youth. When the tissues are insufficiently supplied with nourishment the inevitable end is mental and physical inferiority, and this inferiority, it must not be forgotten, becomes hereditary. Ireland is now suffering very heavily from the neglect of this plain and elementary truth in the past."

Under the false and harsh theories of education that have prevailed, schools have been to a great extent anti-ethical or debasing institutions, developing by disagreeable, unintelligible tasks and severe punishments and upbraidings a spirit of discontent, gloom, deception, malice, and rebellion.

We see the opposite picture when the mother or the qualified teacher collects the little ones and tells them an interesting story of history, biography, geography or natural history. We see in their bright eyes how active their minds are, and how predominant are the amiable qualities.

All the exercises of a school should be attractive, and if as attractive as they should be, no urgeney or authority will be required to secure the attendance of the children or maintain their faithful attention.

No authority would be needed in controlling the amiable Japanese children, who enjoy the instruction of the noble's school in Tokio. At that institution

there is a physical map of the whole country, or rather a model, three or four hundred feet long, in the court attached to the school building. This model is made of rock and turf, and has a border of pebbles looking like water at a little distance. Latitude and longitude on this map are shown by telegraph wires. Every mountain, river and inlet is exhibited with minute and wonderful fidelity. The positions of cities are shown by tablets.

This attractive teaching, so beneficial to the moral nature, so effective in putting an end to school disorder, must necessarily be mainly oral; and fortunately this oral teaching, which combines in the highest degree the moral and intellectual, is adapted to large numbers, and may therefore be most economical.

The contented and happy children who are listening to a good oral teacher need no authority or punishment to keep them in order. They are continually growing in thoughtfulness, mental brightness and amiability. Their pleasing emotions invigorate the intellect, and the entire satisfaction of the intellect animates the best emotions. This is true education—the antithesis of the false.

The idea of stern and gloomy minds, that educational processes should be laborious, and that assisting the student as by a literal translation, instead of compelling him to spend time and fatigue himself in handling a dictionary and guessing at the possible construction of a phrase or sentence, would enfeeble his mind by depriving him of rugged labor, arises from a false conception of the nature of exercise as distinguished from fatigue, and of the difference between development and exhaustion. *Exertion* is certainly necessary to development, but the exertion that develops is *successful and exhilarating exertion.* The overcoming of obstacles gives the power to go on in overcoming them by the exhilaration and self-confidence which it imparts, but exertion which is tedious, disappointing, and often baffled—which keeps the intellectual faculties, not under the stimulus of incoming knowledge, but in the dull necessity of waiting for comprehension,

suffering from the vexation of disappointment, and the depressing feeling of ignorance and stupidity as we fail to comprehend what is before us—is a positive injury to the mind, an inverted education which tends to stultification and dulness of both the intellectual and the moral powers, and creates a permanent dislike to everything associated with books. It is said that the boys of Naples were decidedly averse to contributing to maintain the monument of Virgil, because the study of his Latin poems was associated in their minds with recollections so unpleasant. In Mexico, the youngest children of the higher classes are still kept at school between 8 A.M. and 6 P.M., and, says a correspondent, "It is pitiful to see hundreds of wee bits of weary children returning from school at sunset or in the twilight. The result of this system is that children have a settled horror of books, and probably the reason Mexican ladies read so little is associated with their purgatorial school-days. If you speak to a young girl here of reading for amusement she seems surprised."

Even old Roger Ascham perceived the importance of these principles in teaching Latin, and says in his "Scholemaster," recommending pleasant exercises: "And pleasure allureth love; love hath lust to labor; labor always attaineth his purpose."

So Comenius early in the 17th century insisted that children should be taught only that which they desired to learn, and taught by appealing to the senses.

That which is acquired with pleasure and activity of the emotions is retained as a permanent acquisition. We never forget the most exciting and important event of our lives, but forget with great facility incidents which excited no interest, no animation or pleasure, and especially those associated with dulness or mental depression. Our feeblest mental condition is that of dreaming, hence there are few who retain any definite recollection of their dreams. For a similar reason school-lessons fade out of the memory, and when a boy quits school he has already forgotten much of his acquisitions, and often suffers the still

greater loss that his literary education has been ruined since he has acquired a permanent aversion to the literary pursuit of knowledge, and remains a man of limited information on all subjects beyond the current matters of society and business.

Mr. Herbert Spencer expressed very properly the truth in reference to intellectual education (though without perceiving the ethical element) when he said:

"Experience is daily showing with greater clearness that there is always a method to be found *productive of interest, even of delight*, and it ever turns out that this is the method proved by all other tests to be the right one."

Upon which the Rev. R. H. Quick, of Cambridge, remarks:

"As far as I have had the means of judging I have found that the majority of teachers reject this principle. If you ask them why, most of them will tell you that it is impossible to make school-work interesting to children. A large number also hold that *it is not desirable.*

"Boys' minds are frequently dwarfed and their interest in intellectual pursuits blighted by the practice of employing the first years of their school-life in learning by heart things which it is quite impossible for them to understand or care for.

"When the boys have been taught on this system for two or three years their teacher complains that they are stupid and inattentive, and that so long as they can say a thing by heart they never trouble themselves to understand it.

"School-teaching has been a failure. And a failure it must remain until boys can be got to work with a will, or, in other words, to feel interest in the subject taught."

Such an education establishes the habits of ignorance and justifies the remark of Mr. Quick:

"Most Englishmen are at a loss how to make any use of leisure. If a man has no time for thinking, no fondness for reading, and is without a hobby, what good shall his leisure do him? He will only pass it in insipid gossip. That this is so in many cases is a proof to my mind of the utter failure of ordinary education."

A still more signal evidence is the *ennui* leading to suicide of men oppressed by leisure. All this gloom disappears when we introduce the ethical by a loving teacher who makes the school-room a place of pleas-

ure. A teacher full of knowledge and full of love delights in imparting knowledge as a mother loves to talk to her children. He engages his pupils in conversation, and when he can lay aside text-books he delights to pour out his knowledge as an oral instructor. There is an inexhaustible charm in oral description which enables the Japanese story-teller or lecturer to assemble audiences in the open air and receive immediate pay for the pleasure he has given them.

Oral instruction is therefore the inevitable method whenever the religion of Jesus shall illuminate the prison-house which has been called a school. Whenever the teacher is inspired with this divine element he ceases to be the tyrant compelling repugnant labor. Without this inspiration all the methods adopted in teaching have been tyrannical and unnatural, imposing the greatest amount of repugnant labor with the least benefit, as has been conspicuous in the study of dead languages enforced on those to whom they were simply useless and whom they tended rather to disqualify for a useful industrial life.

Our accomplished minister at London, Mr. J. R. Lowell, said in an address before the Workingmen's College in London:

"He learned Italian entirely by his interest in Dante, and if they wished to learn a language he would advise them to take some great work. They would only need a dictionary; they would not need a grammar. His own experience was that nine men out of ten *learned a language better in this way than by learning the grammar.* They were saved an infinite deal of drudgery, and also an infinite deal of time often spent on grammar to no purpose. If they wished to understand a great master they would soon find out the distinction between his indicative and subjunctive, and they would be led to it in an easier and more agreeable way than by the study of grammar."

My own personal experience is similar to Mr. Lowell's. But pedantic pedagogy has always preferred the use of *rules* to giving directly the knowledge sought, preferring grammar and dictionary drudgery to the interlinear translation or vocal instruction which is the only easy natural method, a method by

which the youngest children master all languages without labor in the home circle. The same remarks are applicable to the English language, which is acquired in perfection without a single lesson of any kind in the home circle of the educated, but is never acquired in the school study of grammar by those who have not such society; and yet this factitious affair, the study of grammar, has been so prominent that our common schools are called *grammar* schools.

If every spelling-book, grammar and arithmetic of the old style were destroyed by a bonfire, education would be assisted. Correct reading, writing and speaking would then be acquired by natural methods and arithmetic by mental processes. At Quincy, Mass., where the natural methods have been adopted, the gain in time is claimed to be a hundred per cent, and in St. Louis there has been a similar gain in learning to read by more natural methods.

In schools as they have been, nearly or quite one half of the pupil's time was occupied in depressing tasks which exhausted the whole brain in the worrying exercise of the least important faculties. The entire process of that book study enforced necessarily by the rod (and creating by disgust and rebelliousness a necessity for the rod) has been a *demoralizing* process for the young, with few compensating intellectual advantages. The effort to ascertain the meaning of the arbitrary characters printed in the text-book, and to realize some intelligible idea therefrom, produced weariness and disgust, without the stimulus of clear knowledge. How irresistibly tempting to the imprisoned lad was the forest with its flowers and birds and free companionship, and how much brighter the minds and spirits of those who escaped the control of the pedagogue.

How much greater the intellectual stimulus of great undertakings and the social or public collision of minds than is ever realized in schools.

But intellectual exertion at the best, without moral inspiration, has no elevating influence on the character, and develops a class of men who do not personally

command our highest admiration.* Hence the remark of Hazlitt that great authors should be "read, not heard." But the ethical element gives a vigor to the brain and a brightness to its manifestations which command our respect, however limited the natural endowment of intellect. The expression of a hero is impressive, and there is a charming mental activity in women of whom we may say, in antithesis to authors, that they should be heard rather than read.

How signally deficient have been both primary education (controlled by the rod) and collegiate education (controlled by authority) in that essential ethical element which gives a healthy vitality. This was candidly admitted in the Harvard oration of Charles Francis Adams (1873), who said:

"At such places enthusiasm becomes difficult, if not impossible. If lighted at all the fire must be spread by the teacher among members working together. In the days of my youth at this university I cannot disguise my impression that the method was formal, mechanical, and cold. No scholar dreamed of sympathy with him in his difficulties, or regarded his exercise otherwise than as a task, for the failure to perform which he lost credit, or at best won a step over his comrades by success. In either event the teacher looked as cold as if he were Minos or Rhadamanthus. In my mind the true maxim is the old one of Horace, applicable as freely to instruction as to the drama:

Si vis me flere, dolendum est
Primum ipse tibi.

"A mighty loadstone is human sympathy! I say this not with any design to reflect upon the absence of it in the mode of instruc-

* "WHAT AILS THE PULPIT?—It cannot be denied that there is a somewhat extensively felt doubt about the effectiveness of the pulpit for the evangelization of the community. Much of the difficulty is believed to result from the present mode of training ministers. The severe studies through which they have to pass, and the somewhat unnatural conditions of college life, undoubtedly tell unfavorably on the health and strength, physical and consequently mental, of many of them. They finish their studies and their health together, and go out to a work that requires a whole man, with a tendency more or less pronounced to consumption or dyspepsia. Nothing that colleges give can compensate for broken health. But this is not all. There is an artificiality and mannerism among preachers fresh from writing trial-sermons that is very disheartening to those who want earnest heart-work in pulpit utterances."—*N. Y. Witness.*

tion pursued at this day, but rather with a conviction that a great change has been going on since my time, which only needs expansion to supersede all that may remain of the old habits."

The New York *Times* said in 1881:

"All who know the old methods in Yale know that there was never any approach of the minds of Professor and student in the class-room except in the 'lectures,' which really belong to the other plan."

When Carlyle became Lord Rector of Edinburgh University he recalled with sadness the utterly heartless coldness with which he had been treated when he was a student.

"Very little help," he said, "did I get from anybody in those years, and, as I may say, no sympathy at all in all this old town. And if there was any difference it was found least where I might most have hoped for it. There was Professor ——. For years I attended his lectures in all weathers and all hours. Many and many a time when the class was called together it was found to consist of one individual, to wit, of him now speaking; and, still oftener, when others were present, the only person who had at all looked into the lesson assigned was the same humble individual. I remember no instance which elicited any note or comment from that instructor. He once requested me to translate a mathematical paper, and I worked through it the whole of one Sunday, and it was laid before him, and it was received without remark or thanks. After such long years I came to part with him and to get my certificate. Without a word he wrote on a bit of paper: 'I certify that Mr. Thomas Carlyle has been in my class during his college course and has made good progress in his studies.' Then he rang a bell and ordered a servant to open the front door for me. Not the slightest sign that I was a person whom he could have distinguished in any crowd."

Such was the system; and if Carlyle had been an ethical philosopher, or understood what was due to the cordiality of human intercourse, he had a grand opportunity of protesting against cold-heartedness and demanding an ethical revolution in educational systems, with a power which would have been felt throughout civilization. But cold selfishness is prolonged by the law of preservation of force; he who has grown up under a heart-freezing system becomes himself too selfish or misanthropic to seek to intro-

duce anything better. Hence even in so enlightened a city as Boston corporal punishment continues in the schools, and the Superintendent says in a late report:

"Teachers of both sexes use personal violence with their pupils in such forms and such frequency that the facts if published would cause unpleasantness. Some put children into painful and even dangerous positions; some shake them at times with such roughness as to tear their clothing, while many still apply the rattan as freely as if it were a feather, and strike not merely the hand but the head and body. Within the last month or two some piteous cases have been reported to me by parents whose children had suffered. The monthly reports of some grammar-schools come in ringing with the echoes of blows."

In France the barbarism of corporal punishment survives only in a few country schools. But in Canada in 1882 the matron of an orphan school was proved to have used mustard plasters! as a mode of punishment, and the Rev. Abbé Verreau in a normal school severely caned a boy, holding his head between his legs and made him kneel down and lick the floor!

The ethical elements are of two kinds (which, however, blend with each other), the energetic and the genial. In the former class we have will or decision, fortitude, perseverance, industry, patience, self-control, temperance, heroism, etc.; in the latter, benevolence, faith, sympathy, candor, courtesy, reverence, love, friendship, hope, religion, etc.—justice, patriotism and prudence being intermediate.

All of these elements are necessary as a support to the intellect. The former give more power, but the latter also give additional activity and rectitude of action to the mind by giving larger and brighter views and that greater impressibility by truth for want of which the most fashionable science and philosophy of to-day is miserably dry, hard, barren and faithless; its maximum gloom being visible in the pessimism of Schopenhauer and Hartmann.

We may realize the paramount value of the moral elements by considering the ruinous effects of their deficiency. Without a moderate endowment of will, fortitude, perseverance, temperance, and industry, the

character is utterly worthless and imbecile. The total absence of such faculties amounts to moral destruction—a state of utter dementia or something worse. The genial elements are almost as essential. Without love, friendship and benevolence, man becomes a wretched misanthrope unfit for society; without hope he is paralyzed by despair. Under such influences his opinions on all matters relating to his fellow-beings would be viciously and malignantly false, and the motives to any noble intellectual effort would be lacking. The energizing power of enthusiasm, love, friendship, and all the social sentiments, is too familiarly known to need illustration, and the more thoroughly we study practical psychology the more clearly appear the importance and necessity of all and each of the higher sentiments to our intellectual efficiency and soundness of judgment.

All the world's false philosophies originate in various ethical defects in their authors, and tend to propagate similar ethical defects in their readers. The writers who would lead the public, knowing nothing of an anthropology capable of determining the normal structure of their own minds and the extent to which they may be abnormal, naturally assume their abnormal modes of thought as the standard of truth, and attempt to propagate the falsehoods into which they have fallen. A large portion of our literature has emanated from men upon the verge of suicide, another from men profoundly selfish, another from those profoundly egotistic, self-sufficient, and indolent, and another from those who would be cruel tyrants if they had the opportunity.

Our literature is like a quarantine station deserted by its officers, at which every victim of disease is free to propagate its contagion.

When reverence, modesty, faith and liberality are lacking, a pragmatic self-sufficiency seeks to overwhelm the public mind with its own narrow and dogmatic theories. Hence the enormous issue of books with which each century strives to fasten upon posterity a portion of its own darkness. Minds unen-

lightened by moral education, and lacking the genial influences of hope, faith, and love, are constitutionally hostile to all real progress and to every great reformer.

Men destitute of the enlightenment which comes from love, and the depth which comes from the reverential element of religion, have sprinkled through our literature the shallowest and most pedantic conceptions of psychology and morals. When the venerable Professor White of Union Seminary asked a pompous young man in what the happiness of heaven consisted, the reply was, "In a proper balance of the intellect and sensibilities." Though the answer was laughed at, it cannot be more absurd than many of the dicta of pedantic writers; indeed it was a harmless folly compared to the dicta of a metaphysical college president at the West who made the shedding of blood either of men or animals the most conspicuous and important part in all the relations between God and man.

Another enormous evil of our immoral education is its failure to develop reverence, modesty and docility, and consequent development of unrestrained *pragmatic loquacity*—a national vice of American society. Ignorance, selfishness and audacity rush to the press and the rostrum, each eager to be heard, none caring to listen. Society is noisy, the press teems with matter not worth writing, and every legislative assembly finds itself incapable of doing its duty in consequence of the enormous loquacity of the majority of the members. Great thinkers are not loquacious or hasty of speech. Loquacity was not a characteristic of Jesus, and those who fail to imitate him are recognized in their long prayers. Profound reverential thought inclines to silence, and does not invade a neighbor's ears without important reasons. Robert Hall is reported to have said, when some one asked him how many discourses a minister might get up in a week: "If he is a deep thinker and great condenser, he may get up one; if he is an ordinary man, two; but if he is an ass, sir, he will produce half a dozen."

The animal impulse of loquacity is often a great

social nuisance. The voice of a rude nature disturbs the harmony of a social circle. The freedom of speech interferes with the freedom of the hearer. The pragmatic talker oppresses everybody, however well he may talk, for he pays no respect to their equal social rights. Eminent men are tolerated in this, but many who have no especial merit become great bores, and are scarcely ever conscious of the fact. Madame de Staël was a brilliant talker, but her loquacity tired her friends and repelled the women, while Madame Recamier, who was a kind, appreciative listener, attracted everybody. It is the ethical nature that listens and grows wise; the animal nature babbles and preserves its identity without improvement. The philosopher leads among enlightened listeners; he is silenced among the babblers. I do not mean that deep wisdom and loquacity are entirely incompatible, but merely that they are as opposite elements as religion and sensuality, or patience and temper, and that growth in wisdom and the higher virtues moderates loquacity.

We need moral education to develop modesty, to silence this Babel, to make men willing to listen with deference; and we need it still more to make men thinkers instead of talkers, to make them willing to learn, willing to be instructed, to break the fetters of stolid conservatism, and *to render the human intellect productive.* Every college should be a focus not only of *learning*, but of *intellect*, and therefore a centre of progress, originating science itself and welcoming science from all other sources. This truth was recognized (where one would least expect to have seen it welcomed) in an address by Dr. Yale to the New York Academy of Medicine, in which were the words, "Every institution of learning should have a *double function*, the teaching of that which is known, and the *investigation of that which is unknown.*" If the functions of the Faculty were determined by these two spheres of labor, the investigation of the boundless unknown would require far more attention than the cultivation of the known. This has been the undeveloped function of colleges, a bud that has never blossomed and

never can in the icy atmosphere of selfishness. Prof. Helmholtz, rector of the University of Berlin, has pointed out in his lectures recently published how very little has been accomplished at English universities by the enormous amounts expended in supporting more than a thousand fellowships ostensibly sustained for some form of intellectual progress. It is not amid the stagnant conservatism of universities that we can find the human mind fruitful of new thought and discovery. A single poor unrecognized genius struggling for his daily bread is often worth more to mankind than an entire university. The foremost steps of human progress have been the work of unbefriended genius. How often is the poor unrecognized genius frozen or crushed, if possible, by the educated corps of conservatives moulded and educated by colleges to hold fast in their ignorance as well as in their knowledge.* Hence the regret of Harvey that he had pub-

* There is no better illustration of this than in the attempts of George Stephenson to introduce the locomotive for railway-travel. The opposition that he encountered from the powerful and learned was so absurd that it sounds to-day like the objections of a professional humorist rather than the arguments of educated men. They were educated, however—educated obstructives—and a very similar education is still given in colleges. Mr. Smiles, in his life of George Stephenson, says:

"At first Stephenson stood almost alone in his belief in the powers of the locomotive-engine. His experiments were carried on in silence and obscurity. They were quite unknown to the journalists, historians, and writers of the day. The great work was done without any help from authors and orators. He never contented himself with dwelling in the regions of speculation and abstraction. He worked energetically in giving life to a dormant principle and practical realization to an abstract proposition. Yet the facts which he developed by experience were laughed at as 'moonshine.' There is something tragic in witnessing the determined hostility which obstructed his efforts. The whole prejudice of the scientific world opposed him. The civil engineers would not admit his facts. They would not even inquire into his experiments. Everything that he proposed to do was demonstrated to be impossible. The civil engineers declared that it was impossible to drive a locomotive at the rate of twelve miles an hour. The engine would be driven back by the wind. If it travelled, it would be beaten by the canal-boats. But it would never go at all. The smooth wheels could never 'bite' upon smooth rails. The

lished his discoveries, and the still more bitter regret of the great American inventor Oliver Evans, who felt so keenly the injustice he received as to direct on his death-bed the destruction of his numerous drawings and models, that they might not tempt another into

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wheels would merely turn round and round, and the whole machine would stand still. It was also declared to be impossible to make a railroad over Chat Moss without stopping short at the bottom. The whole thing was declared to be 'impossible.' And yet the impossible things were done. The impossible locomotive was run, not only at twelve, but at fifty miles an hour, and the impossible railroad was made from Liverpool to Manchester over the centre of Chat Moss. The Legislature baffled him. They reported in favor of road tramways, but resisted railway locomotives. They defeated the promotors of the early railways again and again. At length railways were introduced, and, like all good works, they enriched and blessed the nation. The success of the railway locomotives grew in the main from the mind of George Stephenson. The cow boy, the picker, the plugman, the engineman, the pumpcurer, the brakesman, the colliery enginewright, is truly the parent of the great railway system of the world."

The true parent of the railway system is not Mr. Stephenson, who introduced it, but a greater genius, Oliver Evans, of America, who invented the high-pressure engine and steam-locomotive before 1786, but could not introduce his invention between Philadelphia and New York, though he offered to construct the locomotive at his own risk. American stolidity was then as immovable as the British. "The time will come (said Evans) when people will travel in stages moved by steam-engines from one city to another almost as fast as birds fly." Evans estimated his invention as worth a thousand million dollars, and no one will doubt it to-day. But why could it not be introduced? why did he, dying in 1819, leave it to be realized by posterity on railroads? Had we not then a supply of colleges, of educated men, scientists and engineers! Why were they all as stolid and incapable of reasoning on novel conceptions as the medical contemporaries of Harvey? The only reason is that our educational system has been a system of stultification which, like the Chinese system, left the reasoning faculty undeveloped in the pupils as it was undeveloped in their teachers. Evans was regarded by many as a lunatic, and the same charge was more seriously brought against his contemporary inventor, John Fitch, who invented the steam-carriage and steam-boat in 1785 and ran the steamboat successfully in 1787. Notwithstanding his actual success, Fitch was as unsuccessful as Evans in overcoming the stolidity of his contemporaries. The biography of Fitch is a sad story of the martyrdom of the inventor, which must be charged against a false education.

labors of invention and improvement which had been to him a source of anxiety and sorrow. Still more painful was the experience of his compeer John Fitch in attempting the introduction of steam-navigation in 1786, and such has ever been the history of progress in all ages; such must it continue to be until colleges shall educate the liberalizing faculties which are the source of original thought and invention. They have not yet learned how to do this, and to specify exactly how in their conservatism they are to-day repressing progress, hindering investigation, and holding fast in ignorance, would not enlighten them, for the authoritative and learned conservative in the seat of power has never been in the past enlightened by an appeal to reason, neither can it be done to-day. Opinions derived from prescription or inheritance, or inspired by congenital narrowness of mind, were not formed by reason, and are beyond its power. The superstitions of literature and science are as impregnable as those of national religions, and around all established forms of belief on all subjects bigotry has erected ramparts which it is dangerous to approach except under its own flag; and so intimately has this bigotry been incorporated in the human mind by inheritance and education, that even the innovator who has discovered an error and wishes to introduce a truth, retaining his own share of the original bigotry introduces additional discord by his fanatical utterances and imperious rejection of valuable knowledge obtained by his predecessors. The antagonistic bigotries of conservatism and reform must prolong sectarian partisanship until instruction in the art of dispassionate reason and the process of original thought shall give to both parties the coinciding accuracy of mathematical investigation in the higher realm of coinciding affection, faith, hope, and love, which annihilate bigotry and discord.

The whole atmosphere of education should be that of loving warmth—it should embody in manners that which is so sweetly expressed in vocal music, which energizes every genial sentiment, brightens the imagi-

nation, strengthens hope, courage and perseverance, and sustains us against the fatigue of drier studies, which teachers have not yet learned to make interesting.

Studies which require close, protracted or fatiguing attention should never be prolonged to actual fatigue. A rational system proceeds on the sound psycho-physiological principle that fatigue, pain and disgust are always injurious, and that all healthy invigorating exercises which are pleasant are also beneficial—pain being Nature's sentinel, by which she warns us off from what is injurious, and pleasure or happiness her persuasive monitor, by which we are attracted to what is beneficial.

All beneficial exercises are agreeable, and the old repugnance to pleasant education is based entirely on the erroneous supposition that pleasure implies indolence, and that there can be no very vigorous exertion when there is no fatiguing toil or drudgery to task our fortitude. But in fact *much greater exertion* is made when an exercise is pleasant and interesting than when it is monotonous and repulsive, and made with less fatigue or exhaustion. The interesting and diversified exercises of a gymnasium give a finer physical development than any monotonous and wearisome labor. The exercise of dancing is borne by young ladies with pleasure when the same amount of exertion in mere labor would be considered a hardship. The toils of a hunter pursuing the fox or the buffalo, or the soldier pursuing a retreating enemy, are far greater than those of a day-laborer, but borne with more cheerfulness.

For any effort to be beneficial it should be successful and not baffling. He who runs at full speed over a well-arranged track improves his locomotive powers, but he who toils and slips along over a combination of rocks, ice, snow and mud, fatigues himself without benefit. Thus, in intellectual labors, success is exhilarating and increases our vigor, but when baffled, puzzled or defeated at almost every step, the intellect becomes confused and stultified, energy and en-

thusiasm disappear, and the mind is actually debilitated.

Thousands of unfortunate pupils, victims of the old system, have realized these truths in every month, or week, or sometimes every day of their entire pupilage, and Mr. Bristed, in his book on English Universities, describes the prostrating fatigue, exhaustion and impairment of intellect which he experienced in going through the Cambridge course of mathematics. "It was hard (he says) to keep one's spirits up under the mathematical burden. The feeling was exactly like that of eating sawdust. My mind could extract neither pleasure nor nutriment from the food presented to it. And yet this work did not occupy more than four hours a day of my time, some days not so much. *But those few hours daily* exhausted me more than twice the time spent in congenial studies could have done . . . it was necessary to abstain from any hard and systematic work during the rest of the day." "Not only is the progress in this uncongenial study slow, disagreeable and elusive, but so far from its strengthening the mind of the scholar for more appropriate employments, it actually weakens and unfits it. Fagging at mathematics not only fatigues but hopelessly muddles an unmathematical man, so that he is in no state for any mental exertion. It was the general complaint of men who had been working up mathematics for the Trinity scholarship, or going through a longer probation for the Senate Houses, that it took several days to recover the spring and tone of their minds when they set to work on classics again." The enfeeblement of the intellect was not the only evil effect of this repugnant labor, as it produced even moral depression and injury; "the petulance and irritability thus engendered (he says) were matters of notoriety." Alas, how many millions of young students have been forced through this deteriorating process without a suspicion in their teachers that it was wrong or that anything better was possible. Under the old régime, only daring enthusiasts like Pestalozzi could make any material change. But

so glaring are the evils, that medical science is demanding a change. At a recent meeting of German physicians of the insane, the director of the Brunswick State Lunatic Asylum maintained that "much of the increase of insanity in Germany" is attributable to the excessive amount of work imposed upon the pupils in the national schools. Not only has the brain been injured, but the sense of vision and the eyes have been disastrously affected by a system of education which substitutes text-books for the natural oral method. The statistics of this evil were condensed by the New York *Sun* in the following statement:

> Near-sightedness is increasing in Germany at an astonishing rate. Thirty eye-doctors recently examined the vision of 40,000 pupils in schools of all degrees. They conclude that near-sightedness rarely exists at birth or at less than five years of age, and in village schools the near-sighted form only one per cent of the attendance. In the city schools they constitute 5 to 11 per cent, in the schools next above 10 to 24 per cent, in the next grade of schools 20 to 40 per cent, and in the highest 30 to 50. A physician of Tübingen found in a body of 700 theological students 73 per cent myopic, and Prof. Virchow recently said in the German Parliament that 95 out of every 100 of the medical students are unable to see what lies before them."

If such be the penalty for German scholarship, either the scholarship should be relinquished, or the text-book system abandoned for the ethical system in which the teacher comes into direct contact with the soul of the pupil, imparting the vigor of his own mind and constitution by sympathy, instead of undermining life by task-work.

Dr. Herman Cohn, of Breslau, found that less than two per cent were near-sighted in the primary schools, but 26 per cent in the higher schools, and more than two thirds in the 410 students examined at the Breslau University.

But the confinement injures the spine as well as the eyes, by the position assumed on the imperfect school seats. Dr. Frey, of an orthopedic establishment at Zurich, attributes three fourths of his cases to the injurious effects of the schools, producing distortion of the

spine and other injuries of health; and Dr. Eulenberg, of Berlin, expresses a similar opinion. Well we may say in this matter, "the wages of sin is death,"—the departure from ethics is a departure from health—but the victims in this case are the children, who are not the guilty ones.

Our educational system undermines the resources of body and soul. Among its common results in schools are headache, nose-bleeding, impaired vision, dyspepsia, spinal disease or distortion, general debility and nervousness, and finally consumption.

That the evils of a barbarous system of study still exist on a large scale, we are assured by the complaints of President Porter, of Yale, that many of the pupils of high-schools or academies who are preparing for college in the best communities and institutions, "are seriously impeded in general culture by *the deadening and depressing influence*" of their studies, so that "their germinating activities of thought are arrested and sometimes blighted." Macaulay, who detested mathematics, said in his student letters in reference to that study: "All my perceptions of elegance and beauty are gone, or at least going. By the end of the term my brain will be as dry as the remainder biscuit after a voyage."

From the eminent position of his father, the Hon. Charles Francis Adams should have had the best experience of his time in education. He first attended school in Russia. He says: "I went to school where I learned nothing, and I remained at home where I learned to speak four languages." In England he went to school two years, of which he remarked: "I most seriously say I learned nothing." "Dr. Nichols stood up in his high chair; he came in and looked at us for about fifteen minutes, and if there was any boy to be whipped, it was done, and then he retired into his study." In the United States he made tolerable progress in a Latin school in Boston, but says that he learned nothing in the schools at Washington. The brutal system of the English school was certainly an injury to the moral nature.

What a contrast do we find in these confessions to the experience of every school in which a good teacher gives oral and illustrated instruction in natural science. The Children's Aid Society of New York has found such instruction the most effective means of interesting children, and calling them in from the streets, who could not be attracted by any of the ordinary agencies of education.

Dr. Wayland said in one of his addresses: "If after *six or seven years' study* of the languages he had no more taste for the classics than for Sanscrit, and sold his books to the highest bidder, resolved never again to look into them, it was all no matter, he had been studying to strengthen his faculties, while by this very process his faculties had been enfeebled almost to annihilation"—an overstrong expression of the stultifying power of false systems—but the time is not far off when the system which could sacrifice to dead languages time sufficient for a liberal education, will be accounted a survival of barbarism.

Better ideas are everywhere germinating. The educational reforms for which my father labored near seventy years ago, and for which Fellenberg and Pestalozzi strove, are beginning to be understood. In the speech of Julés Ferry at the Sorbonne a year ago, he said that hitherto the school had been a prison, but that henceforth it would be transformed into a garden, of which even the walls will be rendered instructive.

The truth in reference to education is self-evident to every clear-headed and kind-hearted man. The poet Whittier is reported as saying: "I think that the principal mistake of our present civilization is the *dwarfing of the sensibilities.* After early childhood the cultivation of the sensibilities begins to give place to intellectual training and soon ceases entirely, and the young mind is left to train its own sensibilities. It is also taught to smother and conceal the impressions and sensibilities, and eventually hardens into a spirit of indifference." "Women are more finely adapted to the development of such influences than men, because, for

one thing, they are less exposed to hardening from without. So the society of the future must be acted on more directly by women than that of the past. In the bringing out of the sensibilities they must take a leading part."

An educational system depressing to the entire brain and oppressive to the intellect is necessarily morbid and anti-hygienic in its tendency—developing morbid sensitiveness, physical debility, low spirits, and an aversion to the practical duties of life. A striking example of the morbid effects was that of Miss Gertrude Greenwood, a beautiful young lady, who recently left Mount Holyoke Seminary (South Hadley, Mass.), at the age of twenty, on account of failing health, but pursued her studies in New York, and commenced teaching, but soon became prostrated by physical debility and disease of the brain, and died from that cause. Her admission to Holyoke Seminary was objected to on account of her health, and she was compelled to withdraw before graduating. But why should feeble health be an objection to entering an *educational* institution? Why do not such institutions improve the *body* as well as the mind? Why was the girl broken down and compelled to leave, if the educational system was normal or harmonious in its development? There are probably very few schools where the same result would not have occurred just as soon or sooner than at Mount Holyoke—but they should not occur anywhere.

Cramming has everywhere taken the place of culture and development. In medical schools the area of pedantic instruction is continually enlarging, and the student's memory is overloaded with an amount of irrelevant detail *impossible to be remembered*, of which the practitioner does not retain more than a third—thus neglecting the attainment of curative skill, which is made subordinate to mere learning—and it is well known that the most learned physicians are often the most unsuccessful.

That excellent and beloved teacher, the Rev. Jos. Emerson, of Massachusetts, said of his own early

training in childhood: "In all this there was scarcely any benefit. It conduced rather to dulness than energy." A remark which the *Annals of Education* said was too generally applicable to schools. Mr. Emerson's remarkable success as a teacher was due to his religious fervor, which produced that enthusiastic ardor in his duties which was the sole basis of the success of the renowned Pestalozzi. Thoroughly devoted to practical utility, inspired by religion and poetry, and feeling deeply that the moral influence of his teaching might be (for good or evil) eternal, he was one of the few teachers to whom moral education was spontaneous, and whose own high moral endowments lead them intuitively in the right path, and utilize all intelligence which enters their circle.

When will the old colleges and schools be penetrated by the simple perception of common sense that in proportion as an educational system fatigues, depresses, and benumbs the faculties, it is doing an injury to society. A few warm-hearted teachers of the Pestalozzian class may have utilized the system by their own irrepressible moral energy, but to the majority the system was as degrading to teacher as to pupil—more and more degrading as the teacher was lacking in sympathy, patience, and love. To the morose and impatient temper of Carlyle, teaching was a degrading vocation, and after teaching the Kirkaldy school two years he gave it up, declaring that he "would prefer to perish in the ditch if necessary, rather than continue living by such a trade." *

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* The repulsive and sickening nature of school duties is due to their development of the baser passions of tyranny and cruelty. The howlings of the flogged children of the Romans have been equalled in many a modern school. Mr. Royce has recorded one extraordinary German example as follows:

"John Jacob Hauberle, more punctual than the rest kept a school-flogging journal, in which he informs us of having administered during his schoolmastership of fifty-one years and seven months 911,257 strokes of the cane, and 124,000 of the rod, also 20,989 blows with the ruler; not only 10,235 boxes on the ear, but also 7,905 tugs at the same member, and a sum total of 1,115,800 blows with the knuckles on the head. He imposed besides 22,763

In proportion as education is made interesting and pleasant, we insure not only present progress, but an unflagging progress through life; investigation being associated with pleasure will become a permanent habit.

The union thus established by a genial educational system between the intellectual and the ethical produces an elevation, clearness and brightness of thought which insure progress in truth, and guard the mind against narrow dogmatic and fanatical theories. Thus will moral education purify and ennoble our literature, while it renders intellectual exertion efficient and truthful not only in education but throughout life.

These great and pure effects require great and pure causes. The elevation of the pupil requires the prior elevation of the teacher, whose soul must be ruled by strong unselfish impulses which are found more often among women than among men. Ethical inspiration must come through an ethical medium. Only the good are competent to minister rightly to human progress, even in the mere acquisition of knowledge.

Charles Sumner said of Judge Story: "Only a good man can be a teacher, only a benevolent man, only a man willing to teach. He sought to mingle his mind with that of his pupil. . . . He well knew that the knowledge imparted is trivial compared with that awakening of the soul under the influence of which the pupil himself becomes a teacher. All of knowledge we can communicate is finite; a few chapters, a few volumes will embrace it. But such an influence is of incalculable power; it is the breath of a new life, it is another soul."

That breath of a new life which gives another soul must be poured out continually by the voice—the only channel through which soul flows into soul with unrestricted freedom.

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fines in the shape of chapters in the Bible and catechism and parts of grammar to be learned by heart, 'made 5001 ride the wooden horse, 777 kneel on peas, and 631 on a sharp-edged piece of wood.'"

Looking at education merely as an intellectual process, there is nothing which can advance its power and efficiency like the ethical element—not only by the enthusiasm, the delight, the energy, the mental clearness and activity produced, but by its power to render fruitful several years that are actually lost from intellectual education, or worse than lost in the formation of idle, careless and wayward habits. More than one fourth of our population is under ten years of age, and the entire intellectual progress of children of that age is very small in amount. But when the teacher follows the impulse of love and sympathy in oral instruction and in visible illustration, children may begin to acquire useful knowledge, kind sentiments, and admirable manners, at least as early as five or six years of age, or in the Kindergarten as soon as they can be trusted without the presence of the nurse, and by the age of ten may have acquired a good introduction to the knowledge of geography, natural history, chemistry, astronomy, physics and hygiene.* The rudiments of all sciences may be given in an interesting manner to children, and the knowledge of reading, writing, arithmetic, drawing, geography and the physical science which may be thus acquired by ten years of age would astonish those who know only the old methods of education. This has been demonstrated in the Kindergarten schools by the progress of their pupils, and of those somewhat older Prof. H. Nicholson, of the Tennessee State Agricultural College, says:

"Experience in the East Tennessee University, as in all other institutions, has demonstrated that the text-book of science should be to the science teacher what the text is to a good preacher, merely a short statement of the principle or truth to be elaborated, illus-

*The father of the author was an original thinker, and was familiar with the most advanced educational views of his time when the Pestalozzian improvements were under discussion. He had great anticipations as to the success of his methods with his son, and I remember that at the age of ten I had acquired a moderate knowledge of reading, writing, arithmetic, grammar, geography, history, astronomy, geometry, chemistry, and natural philosophy, and was beginning the study of mental philosophy, political economy, and the principles of the federal government.

trated and applied. For the proper teaching of any physical or natural history science, therefore, three things have been found to be indispensable: First, A brief statement of the radical principles. Second, A clear and simple oral exposition of each principle. Third, Practical proof and application of each principle by experiments. Experience has further demonstrated that by faithful and judicious use of these three agencies any of the natural history or physical sciences may be profitably and pleasantly taught to a boy of ordinary intelligence. It has also proved the good effect of the study of the sciences on the boy's character."

In accordance with these enlightened ideas the teachers of elementary classes in colleges at Paris are required to conduct their pupils through the galleries of the Museum of Natural History, and instruct them on the specimens.

All progressive minds are gradually reaching similar conclusions. At a recent discussion in the Education Society of England the conclusion was arrived at by the members that the knowledge of nature should be acquired not from books, but from things, not through verbal memory, but through observation and experience, and that the child should begin with observation and reasoning from common things, and advance along matters of interest into the collateral departments of science. Never would any other method of teaching have been adopted if ethical influences had pervaded schools. The loving teacher would have presented only that which would gratify instruct and delight his pupils: from the examination of plants he would advance into botany, from the appearances of the immediate neighborhood into geography, from gathering pebbles into geology, from simple experiments into chemistry, from drawing into geometry and writing, from counting into arithmetic and algebra, from star-gazing into astronomy. The mountain of science is approachable by gradations so easy and pleasant that the youngest may begin the ascent when led by the hand of love.

The doctrines presented in this chapter may be concisely embodied in the following propositions:

1. The moral power is the most important of all in education because it is the basis of intellectual power,

of mental soundness, of healthy normal development, and of true success in life.

2. The ethical or spiritual element in man, which is the most important subject of education, is so far above the sphere of materialism that it cannot be adequately comprehended or developed by any one whose modes of thought and feeling are controlled by materialism. In its highest development, which is religion, it is not the mere product of physical conditions, but becomes a power capable of resisting our physical environment.

3. The intellectual is the feeblest and least important of the psychic elements of our constitution, and depends upon the other elements for its development and efficiency, being of itself quite helpless.

4. Each of the psychic elements of humanity has its special apparatus in the nervous system and body, through which it may be studied and scientifically comprehended as to its nature and development—a vast work, the outlines of which I have given in 1854 in a System of Anthropology, and shall reproduce at an early date.

5. In cultivating the ethical nature by the voice of the pupil, the voice of the teacher, and the exercise of schools, *the law of pleasure* must be obeyed, that is, all exercises should be invigorating and pleasant, and not fatiguing or painful. Every educational process should be attractive and not repulsive.

6. Exercises that fatigue the intellect and develop no moral energy defeat the purpose of education.

7. The ethical elements are of two classes, the heroic and the genial. Both are essential to education and to literature and philosophy. Colleges and literature alike suffer from their absence.

8. Original productive thought, discovery and progress depend essentially upon the elevating, energizing influence of the ethical elements, *without which there is no beneficial improvement in anything*, and for want of which barbarism, ignorance and stolid conservatism forbid all progress.

9. The systems of education prevailing in this cen-

tury have been fatiguing, depressing and injurious to both mind and body, injurious alike to teachers and pupils.

10. A high development of the moral faculties in the teacher is an essential basis of educational improvement, and this high development naturally tends to oral and illustrative teaching.

The positive manner in which the author has expressed himself in this chapter in reference to the science of the brain and his own experiments is so contrary to the general materialistic and mechanical tendency of scientists to-day, who with innumerable and disastrous blunders (disastrous because involving human health and life) are trying to convert the science of life into a mere science of matter and force, as to require an explanatory note.

The excitation of the various convolutions of the brain in living persons in their most normal condition, and the revelation of cerebral functions which have been vainly sought by pathology and vivisection, is either the wildest of hallucinations or the most important step that has ever been taken in science and philosophy. I have done little as yet to bring it before the world for many reasons; but the following testimonials indicate that I have never failed to satisfy any intelligent body of investigators to whom I have presented the subject.

From the Report of the New York Committee—William Cullen Bryant, Dr. Samuel Forry, and Hon. J. L. O'Sullivan—1843.

"They have had sufficient evidence to satisfy them that Dr. Buchanan's views have a rational, experimental foundation, and that the subject opens a field of investigation second to no other in immediate interest, and in promise of important future results to science and to humanity."

From the Report of the Faculty of Indiana State University.

"Such were the facts which we have witnessed, not as a mere matter of amusement, to prove that such things can be done, and to excite wonder, but as illustrations of the most startling discovery that has ever been made in the science of man, the consequences of which are too extensive to be foreseen."

"These experiments were wonderful indeed, but are too well established by repetition to admit of a doubt."—*Hon. F. P. Stanton and others of Memphis Committee.*

"It is but justice to Dr. Buchanan to say that he advances no views and urges no doctrine which he does not fully sustain by experiment."—*Judges Clifton and Mayes, Hon. J. D. Freeman, Dr. Cabaniss, and others of committee, Jackson, Miss.*

"While therefore we gratefully accord distinguished honor to the labors of DR. GALL and his coadjutors, we do at the same time regard the contributions which have been made to Anthropology, by DR. BUCHANAN, as far exceeding those of his predecessors."—*Prof. Warriner and Medical Class of* 1849–50.

"At present, however, you are in advance of the age."—*Prof. Charles Caldwell, founder of the Medical College of Louisville University.*

CHAPTER VIII.

THE RELATIONS OF ETHICAL TO PRACTICAL EDUCATION.

The laws of culture and growth; what they demand for ethical culture.—The beauties of nature an element of culture.—Social harmony.—Ethical food and ethical exercise.—The code of manners.—Self-support a duty, and industry identified with virtue.—Effects of employment.—Economy.—Duty of preserving health.—Its violation at a college.—General disregard of hygiene.—Virtue requires labor.—Colleges violate this law.—Occupation necessary to health and to virtue.—Example of Wellesley College.—Combined training of the muscular and the spiritual.—Superiority of school training in the industrial arts.—Boston Technological Institute.—European industrial schools.—Efficiency of combined study and labor.—Stultifying effect of learning trades in shops alone.—Contrast of the industrial and the cramming system.—Ignorance of trades a cause of crime.—Strong testimony of Prison Reform Conference.—Industry diminishes crime.—Labor necessary to correct a false moral sentiment.—The false collegiate system illustrated in England and Germany.—Great changes necessary.—The industrial system more pleasing and attractive than any other.

THE law of action and growth demands a fundamental change in our educational systems. Every faculty that we would cultivate must be brought into action. It is as impossible to cultivate the moral as the muscular faculties without exercise, and that exercise should often be prolonged to the border of fatigue. Exercises should be continued regularly, and as our powers increase, greater performances should be undertaken: but all exercises should be of the healthful or pleasant character which is conducive to growth or development, and should be accompanied by a full supply of the normal food of the faculties.

These are general and almost self-evident princi-

ples applicable to the culture of every element of humanity. The normal exercise of the muscles is motion against resistance, overcoming the resistance, and their normal food is pure oxygenated blood. The normal exercise of the digestive organs is the solution and vitalization of digestible substances, and their normal food is the digestible matter which readily yields to their action and gives a healthful soothing impression as it is digested. The normal action of the intellectual faculties is the acquisition of knowledge, and their normal food is the raw material of knowledge which may be digested into rational conceptions with facility. As the stomach is oppressed by indigestible matter and exhausts the vitality of the whole body to sustain it, so is the intellect oppressed by confused and unintelligible matter, and the whole mental energy exhausted in sustaining the oppressed intellect. In like manner the practical energies delight in the exercise of beneficial achievements, and their normal food is found in the profits, honors and powers which they are able to secure in the active pursuits of life.

The ethical faculties (love, duty, firmness, etc.) delight in the exercise of diffusing happiness and witnessing health, joy, comfort and prosperity, and consequently in relieving disease, pain, disappointment, ignorance, despair and poverty. Their food is human happiness and virtue—their exercise the active promotion of both. Ethical culture then implies a continual exertion for the promotion of the happiness of others and for their moral elevation and exhilaration, with an abundant enjoyment of the results of such efforts and of the happiness which the higher faculties of humanity and the fortunate conditions of society have made possible.

Ethical culture therefore requires that the pupil should be surrounded by those who are contented and happy, who are entirely governed by the better qualities of humanity, and that he should be actively engaged in contributing to their happiness while his own nature is being developed by their congenial association.

The growth of the happy and loving elements of human character is in progress wherever happiness prevails, as it is retarded or suppressed in an atmosphere of gloom, anger, selfishness, jealousy, contention, tyranny and cruelty. The common school has been from the earliest times a demoralizing institution in which the tyranny and harshness of teachers has produced fear, anger, and debasement in pupils. The cries and yells of children punished in the schools of ancient Rome illustrated and developed the reign of evil passions which were glutted in sanguinary wars and in the bloody spectacles of the Coliseum. The tyrannical spirit of the military camp has necessarily ruled in the school since it has pervaded all society, and additional gloom was derived from a horrid theology which recognized God only as delighting in punishment, and which everywhere signalized its rule by the prison, the gibbet, and the stake, or by mobocratic assassination.

Away from the stifling moral atmosphere of schools and camps, the churches of bigotry and superstition, and the marts of trade where men struggle for unfair advantage, would the moral faculties lead us into the calm atmosphere of divine benevolence in the country where the blooming flowers, the flourishing grainfields, the lofty health-giving forests and the varying brilliant sky inspire the divine love and fill us with a calm delight in which we renew that broad love of humanity which is stifled in the wretched atmosphere of selfish contests.

The beautiful beneficence of nature is an essential element of moral education, and to enjoy its influence the school-room should be surrounded by flowers and foliage, vines, trees and grass-plots in which the pupils may enjoy their sports, and if this be not practicable in the city, flowers and vines should be kept growing in boxes around the windows, on sunny porticoes and on embowered roofs (surrounded by walls or railings that render the place perfectly secure), and among these refreshing beauties (which would repay their cost in shielding the roof and the windows from

the burning sun) the glad voice of many song-birds should be heard, pouring forth the spirit of love and enthusiasm that animates their beautiful forms, rendering the school-room the most attractive resort known to the young. These beneficial influences should be supplemented by excursions to the country by land or water, for their moral benefit, utilized in botanical and mineralogical explorations and lessons upon birds, vegetation and animal life. The delight of these intellectual and social picnic excursions in rural scenes, enlivened with songs, sports, games and refreshments, will furnish reminiscences that may cheer many hours of maturer life.

The school-room may be made attractive by its decorations and pictures, and above all by its interesting exercises; but as youth demands greater variety and is more intolerant of monotony than adult life, confinement to the room should never be prolonged until it becomes wearisome; frequent intervals of relaxation should occur, if only for five minutes to take a race on the grounds or play some little game, returning from which a snatch of song with a promenade or some calisthenic exercise should reanimate the zeal of the student.

Thus should the ethical nature be kept in continual growth, fed by the Divine love through the beauties of nature, by the love and inspiration of song, and by the manly or womanly virtue expressed in the voice of a teacher who loves the pupils and delights in the performance of duty, the diffusion of knowledge, and the winning of the love of the young.

No sound should fall upon the juvenile ear but of voices in harmony with kindly sentiments and genial manners. Peremptory orders to overcome stubborn wills, harsh rebukes, threats and scoldings should never be heard. Nothing that excites alarm or humiliates self-respect should be tolerated; kindness and courtesy should make all the intercourse of the school-room pleasant; and punishment, if necessary, should be administered in another apartment. But under a proper system of moral government (see Ethical Culture)

punishment would never be needed except by a class of depraved youth whom it might be necessary to isolate from the rest until reformed. But even the worst class of youth would not need any punishment after the influence of one or two years of moral education have been realized. As men of depraved character are sometimes agreeable in their families, where they have a sphere of affection, so would children who come from a sphere of turbulence and rudeness grow into the habit of suppressing the evil passions in the presence of the unvarying harmony and amid the interesting exercises of the school-room.

Having thus secured for the ethical faculties their proper food in social harmony, and scenes of beauty and happiness, we need the best exercise by which this moral nourishment shall be appropriated and utilized in growth. Analogy makes this clear. No amount of feeding without exercise will properly develop the body. It may grow, but the growth will be soft and the muscle feebly corpulent instead of athletic; such a body disappoints us in its achievements. Just so in the development of the soul. It may be morally emaciated and dwarfed by the lack of moral food and exercise. Surrounded by brutality and tyranny, hearing no voice of love and seeing no beauties of nature, many a poor maltreated child in the city becomes by moral starvation a mere animal. Its higher faculties have never developed for want of food. On the other hand, the child of loving parents, shielded from everything unpleasant, fed with kindness, harmony, beauty and love, but never disciplined by exertion in the performance of duty, becomes in every respect feeble and unfit for the duties of life, and, though full of refined sentiment, unable to resist the depressive and debasing influences of contact with selfish society.

If therefore our moral education dealt only in refining humanizing influences, it would not accomplish its chief purposes in fitting the pupil for the *duties* of life. A surfeit of food, without exercise to appropriate the nourishment and develop a taste for more, impairs

digestion and health. So does the surfeit of kindness bestowed on a pampered child impair its power of appreciating what it receives, and become the food of the selfishness and arrogance seen in spoilt children. Food must be accompanied by exercise, and a more robust moral constitution is developed by exercise with scanty food than by food with scanty exercise. The overtaxed wife who rears her family by incessant toil without sustaining care from her husband, attains a better moral development than the petted wife who knows little of the labors and duties of life.

What then are the exercises during education which are fitted to give a robust moral development?

In the first place, every moral faculty should be required to manifest itself in the control of conduct and manners at all times, and the cultured moral sense of the teacher should vigilantly observe every departure from the dictates of the highest sentiments. A high-toned code of manners should be adopted, and its observance made easy by habit and example, while its propriety and necessity should be made familiar to the mind by lucid explanations and illustrative anecdotes. Once every day a brief discourse should be given by the teacher, not over fifteen minutes in length, illustrating in turn each of the virtues and the propriety of each rule of manners, and when the general principles were sufficiently understood, interesting narratives would not only impress them on the mind, but would themselves attract by the charm which attaches to romances, which are by far the most popular literature with the young. Moral lessons conveyed in the narrative form make a deeper impression than in any other mode. Under the influence of such instruction it will be easy to lead the pupil into benevolent acts, such as volunteering to help the sick or unfortunate. The pupils of M. Wichern willingly shared their scanty accommodations and limited food with the sufferers by fire at Hamburg. Pestalozzi invited his pupils at Stanz to help the unfortunate children left destitute by the destruction of Altdorf, telling them they would have

to work harder and eat less, and they willingly undertook to make these sacrifices.

But something more than all this is requisite. True, the constant observance of all the forms and expressions of kindness, deference, candor, courtesy, liberality, politeness, fairness, good temper, docility, self-control and dignity must establish these virtues in supremacy and form a character fitted for social harmony. But social harmony is not a moral career. Life is a labor, a struggle, and to many a battle—a battle either for selfish or for noble purposes. Our moral principles must be identified with our life struggle—with all the firmness, heroism, energy and industry of which we are capable.

Therefore, they must begin their exercise not only in the assumption of appropriate manners or expression, but in appropriate acts. We should as pupils (either in education or in after-life) ascertain carefully what duties are incumbent upon us, and commence their practice without delay or omission.

The first moral duty incumbent on every human being is that of self-support. He must support himself or be supported by others. Enlightened conscience demands that he shall support himself, and, if possible, give assistance to others who need it. This duty cannot be lightly postponed to manhood, for in that case we are establishing a habit of depending on others. Children should assist in the cares and labors of their parents as far as possible, and during their education they should keep their business destination in view and diligently prepare for the labors of life. This preparation is a moral duty. If we feel the responsibilities that are to rest upon us, we should make the preparation therefor a leading object. In other words *moral education involves industrial education* as an indispensable element, and there is no substantial and complete moral education which excludes the industrial element and surrenders the pupil to the luxuries of mental and moral culture, without realizing the great permanent duties of life and commencing their performance.

This does not imply that all shall engage in vigorous manual labor as the only industrial occupation, but that all should be engaged in preparing for a life of usefulness and self-support—that all should feel the urgency of duty and realize the value of time as something that cannot be innocently trifled with or squandered. They should realize that every hour has its duties—that idleness is a form of profligacy of which they should be ashamed, and that every day should be conducted with a view to results in future years—to the early attainment of independence and the performance of beneficent deeds.

This conscientious fidelity and forecast are the basis of that higher fidelity and wisdom which belong to religion, which serves the highest ideal of duty now and prepares for the endless ages of the higher life. No moral life is sound which is not occupied in labor for the future, or which occupies in trivial and pedantic studies time which should be consecrated to useful achievements. Nor is it a proper introduction to the duties of life to allow the eighteen or twenty years of minority to be spent chiefly in idleness, acquiring indolence and thriftlessness at least, and often profligacy and turbulence. A little calculation will show that the average school-boy of the city spends three-fourths of his time in irresponsible idleness, learning practically that the indulgence of all his appetites, passions and impulses, without a thought of the future, is his natural right, and fixing in his constitution the habit of a heedless life without responsibility.

When the vicious children of New York demoralized in idleness get into the boys' prison of the Tombs, the manager, Mrs. Hill, finds that nothing will do them much good but *employment.* "How do I keep them out of mischief?" said Mrs. Hill. "Oh! I have solved that problem. I tried books and games and pictures, but found them all to fail. I came to the conclusion the boys should be kept *constantly employed* at some intricate as well as interesting labor. I decided to put them at bead-work. I taught the boys to make rings, crosses, necklaces, and such things. In my experience, boys

brought in here have no home influences, and as a rule they are *devoid of moral sense.* A boy may come in here with a sore toe; the others will amuse themselves by stepping on it. They seem heartless. Very, very few have any real good in them to start with, so that I find it most difficult to start them in the way of doing right. Once *get them employed*, and show them that I take an interest in their work by praising it and showing it to others, they bristle up and gradually change to something humanized."

No education is complete and sound which does not impress on the mind the value of labor, and of the wealth which it creates*—which does not give a realizing sense of the cost of all that we enjoy and the necessity of handling conscientiously every dollar that comes into our possession. To earn a dollar by a day's labor is the only way to learn its value. He who knows money only as a gift from parents, never as the product of his own toil, handles it with a freedom which is very apt to be prodigal if not profligate, and in this profligate management of wealth may squander thousands on selfish pleasures, but seldom gives from real benevolence. Unless he is practiced in youth in diligence and self-control, he has a very poor conception of substantial virtue.

Nor is there any sound moral education unless the conception of our life duties is the dominant and all-pervading thought, both in teacher and pupil, each working to prepare for a special career.

The most imperious and pervading demand of the moral faculty is to preserve our own health and the health of all around us with vigilant care. To neglect this would exhibit deplorable ignorance or deplorable moral apathy. This very ignorance and moral apathy have pervaded our colleges time out of mind, and it is

* Prince Albert seems to have had some such ideas, for the letters of Sir Charles Lyell, lately published, speak of the household of Queen Victoria, and describe the young children working diligently with spades and hoes under their father's direction, and receiving the pay of common day-laborers, to teach them something of the life of that class of the population.

not long since one of our most flourishing and famous colleges (Princeton College) was broken up—the class dispersed—by an outbreak of malignant fever caused by this negligence. Dr. Doughty, who attended Mr. Rainsford, one of the victims, said: "It seems hardly credible, as I have been informed was the case, that through defective drainage and plumbing the poisonous exhalations of a great cesspool were allowed to filter into buildings of the college that were occupied during the great part of the day and the whole of the night by young men whose health should have been the first consideration of the faculty." I do not refer to this as a reproach to Princeton College, which is about on a par in this respect with other institutions, and which has since entirely remedied these sanitary defects, but as an illustration of the prevailing heartlessness or moral apathy in collegiate institutions. With barbarian energy they dazzle the public eye with the ostentation of brick and marble, while neglecting the health of *soul* and *body* in those under their care. This apathy has been universal, and even the Prince of Wales a few years since narrowly escaped death from the same causes so fatal to Princeton students—a violation of hygienic principles in house construction which would not occur if builders and workmen were properly instructed in their business, and knew how to control the movements of liquids and gases for which they construct pipes and reservoirs. It is a very small amount of knowledge indeed (which could be imparted in three or four hours of clear practical instruction) but for want of that little knowledge alike in mechanics, scientists and literati, half the buildings of the city of New York are in an unwholesome condition, and not only our national Capitol but the hall of the meetings of the French Institute has been in a shamefully unwholesome condition, which provoked the condemnation of M. Leverrier. This matter is so important to the health which sustains our moral as well as physical energies, that I deem it necessary to give a special chapter to ventilation. Fortunately for New York, the Technical Schools of the Metropolitan Museum of

Art at Sixty-seventh street and First avenue, under Mr. John Buckingham, have opened a class for instruction in sanitary engineering (May, 1881), which receives two lectures weekly for two months, and will be qualified to conduct the work of the plumber beneficially to the public health.

It is moral apathy which neglects hygiene and ignores the sentiment of social morals expressed in the daily question, "How are you?" or "Are you well to-day?" and it is the isolation of the college from human life which is a consequence of this moral apathy. A society in which men bury themselves in the literature of older and more barbarous times, ignoring, or at least neglecting, the fresh thought and original discovery of to-day and the daily news of human progress, is a cold, unwholesome place for the human soul, and collegiate morals become sentimental, not practical and real.

It is a puerile feebleness of character which merely contemplates or admires the virtues and cultivates pleasing manners without seeking to know what is incumbent on ourselves and resolving to do what duty demands. The very word virtue implies that strong sentiment of duty which is prompt and eager to act. An indolent sentimentalism without real virtue may be very pleasing in society and very deceptive, because indolent, irresolute, and practically almost worthless for any important purpose.

Shall we in education cultivate this indolent sentimentalism or robust virtue? Shall we cultivate sentiment without action, and thus divorce them, and establish for an educational period of five or ten years, which forms permanent habits, an emasculated moralism, which utters fine sentiments and seems to feel them, but does no good deeds that require effort? We must determine the choice between lazy semi-profligate sentimentalism and manly virtue, by leaving the pupil in pampered ease, or by requiring him to assume his share of the burden and practical duties of life, and grow up in the strength derived from bearing burdens and responsibilities.

The country lad who assists his parents on the farm enjoys this moral discipline, of which city youth are generally deprived, and consequently attains the robustness of mind as well as body which wins success. Such was the experience of Horace Mann in youth, who said in a letter to a friend: "Train your children to work, though not too hard. I have derived one compensation from the rigor of my early lot—industry or diligence became my second nature. Owing to these ingrained habits, work has been to me what water is to a fish. I have wondered a thousand times to hear people say, 'I don't like this business,' or 'I wish I could exchange for that,' for with me, whenever I have anything to do, I do not remember ever to have demurred."

"Manual labor," says Channing, "fosters a sounder judgment, a keener observation, a more creative imagination, and a purer taste."

The old collegiate system was eminently calculated to foster profligacy, and, indeed, was quite successful in lowering the moral tone. Young men were exempted from all laborious duties, and simply expected to read text-books and listen to teachers. While the moral sense was thus deprived of manly exercise, they underwent the demoralizing influences of the unregulated association of youth, generally turbulent, and untrained in good breeding and good morals, and the depressing influence of a collegiate authority, cold, indifferent, unsympathetic, and somewhat tyrannical. Hence colleges have often been hot-beds of vice and coarse animalism, which is especially true of medical colleges, in which the public have a right to demand the highest degree of ethical excellence.

The moral degradation of the collegiate atmosphere was not compensated in the universities by any substantial intellectual acquisition, either of useful knowledge or of original thought. Until the middle of the present century all was hollow and unsubstantial. As Locke said, "We learn not to live, but to dispute, and our education fits us rather for the university than for the world. But it is no wonder if those who make

the fashion suit it to *what they have*, and not to *what their pupils want*."

This art of disputation was a part of the demoralizing influences of college education. The languages, grammar and rhetoric which constituted the body of education two hundred years ago were entirely void of moral or rational influence, and were associated, especially in Jesuit schools, with cunning disputation and eager, envious rivalry or emulation destructive of generous sentiments and love of truth.

I refer to these things, though somewhat obsolete, because colleges retain so permanently the *spirit* even of an obsolete system, and for the first half of this century they have been giving an education with so little utility or true mental culture as to have provoked the rough exclamation ascribed to Horace Greeley, "Of all horned cattle, a college graduate is of the least value in newspaper work." What just view of human life can be entertained by one who, neglecting useful knowledge, has spent the major part of his time in acquiring familiarity with the dead languages, which are but a minor portion even of intellectual education? "I venture to think," says Prof. Huxley, "that a knowledge of Greek is no more an indispensable element of a liberal education than is a knowledge of Sanscrit, or of the differential calculus, or of vertebrate morphology."*

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*The disastrous effects of neglecting useful knowledge in the pursuit of the dead languages, have been terribly realized by many college graduates. The New York *Times* of May 7, 1882, said, speaking of the unemployed in New York: "No small number of the searchers for places are native Americans, forced to take whatever offers, and nothing offers. Many of them are educated men, who can conjugate a Greek verb without difficulty, but Greek verbs, however ornamental, are a poor stock in trade. A thorough classical education, however desirable it may be, is of little use in the employment market, unless backed by some useful practical knowledge. College graduates are standing on every corner, looking for work. If any person should desire to ride up Broadway in a coach drawn by a score of accomplished collegians, he would have no trouble in employing them, even if he offered them no more than their board."

The establishment of the Alsatian College at Paris, now one of the most valuable educational institutions of that city, was due to the tenacious adherence of the universities to their lingual studies, and the determination to establish physical science in the space heretofore given to the classics.

Useful occupation is essential to mental health, and it is the lack of useful occupation which fills our jails with criminals, and does much to fill our lunatic asylums. Of New York criminals, recently statistics show that two thirds knew no useful trade, and among lunatics the introduction of useful employments has been the greatest of benevolent innovations. The superintendent of a New York asylum said that the idleness of the patients was deplorable, and that he had known a violent insane patient benefited by putting him to break stones on the road. Many a profligate young collegian might have been saved and reformed by industrial training. The Romans understood this principle in the management of soldiers, regarding their idleness as dangerous. Tacitus says that the amphitheatres of Bologna and Cremona were erected by Vitellius less as a matter of benevolence to those cities, than for the purpose of keeping his turbulent legions employed.

The manly as well as the amiable virtues should be cultivated from the very beginning of education. The youngest children should be taught to *make themselves useful*, and to regard an indolent and useless person as a degraded being, a loafer, a pauper, a shirk, a beggar. They should be taught to perform errands and services, to wait upon their fellows at table,* to clean their school-room and put everything in order, to attend to their bedrooms without the assistance of a chambermaid, to make fires, to manage the ventilation, to handle the fuel, to bring water and hand it round, and generally *to seek every opportunity of rendering a service.*

* If one half sit down at table, while the other half wait upon them, after which they exchange their positions, the moral effect would be far better than that of depending on servants.

In the magnificent Wellesley College for women, at Wellesley (fifteen miles from Boston), the pupils do all the lighter work of the household—"they set the tables, wait upon them, clear them away when the meals are done, sweep and dust both public halls and private rooms, are, in a word, the housekeepers. It is an incidental advantage of this system that it largely diminishes the expenses of service, and reduces the price of board and tuition. . . . After four years of college life, graduates do not go back to look down upon the household work of mother and sister as something menial and servile. It has been throughout a part of their higher education." (L. Abbott.)

The youngest should be trained by these methods in habits of useful industry, but those over ten years of age should be trained not only to industry, but to skill and energy in manly vocations. There is a vast variety of useful occupations in which boys and girls might be profitably engaged, without suffering from the dull tediousness of monotonous labor. The cultivation of the garden, orchard, and vineyard, the raising of poultry, the care of animals and the harvesting of crops* of all kinds furnish an interesting variety of out-door employments, which would be made doubly interesting by the stimulus of companionship and competition, enlivened at times by songs. Gardening is taught in the schools of Japan, and nowhere in the world are the flower-gardens so perfect, or the manners of the people so courteous and friendly.

For in-door labors there is a still greater variety, since there are few handicrafts in which they might not be trained. The vocations of tailor, shoemaker,†

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*Vermont boys under seventeen years of age, in competing for prizes offered by Trustees of the University and State Agricultural College, raised extraordinary crops. Their highest yield was 192 bushels of shelled corn to the acre (which old farmers can hardly believe), and 422 bushels potatoes—the latter three times an ordinary crop, and the former more than four times.

†In the Industrial Home school, near Georgetown, D. C., boys are taught shoemaking and other useful trades, and girls receive instruction in household duties.

basket-maker, carpenter, cabinet-maker, metal-worker. hatter, cook, pharmacist, draughtsman, printer, etc., etc., furnish varied and interesting occupation, in the pursuit of which under proper instruction more useful knowledge would be gained than in their literary studies, while every hour of such occupation constitutes a practical moral lesson, teaching them to prepare for useful lives, to sympathize with the laboring classes, and to pride themselves on useful abilities, instead of renouncing human brotherhood in their scorn of the poor workman, and taking their chief pride in ornamental but useless attainments. Moreover, all these labors would be portions of a true hygienic system for raising the physical constitution to its maximum power and health. The training given to a mere athlete for physical contests is not the best. It aims merely at muscular development, but a true educational training combines the muscular and the spiritual, the moral energies as well as the physical, and therefore produces a higher grade of health. Crib, the champion pugilist of England, reduced his corpulence in eleven weeks' training from 16 stone to 13 stone, 5 pounds, and vanquished his antagonist. In a true training-school, the increase in moral energy would be as great as in muscular power, and with that increased moral power the man would have far greater endurance. "A somewhat varied experience of men," said Prof. Huxley, "has led me, the longer I live, to set less value upon mere cleverness, to attach more and more importance *to industry and to physical endurance.* Indeed, I am much disposed to think that endurance is the most valuable quality of all."

Industrial training obtained at school is practically *worth more* to the majority of pupils than all their intellectual education. It is an assurance of independence and success. It places the pupil in a short time, without any serious hindrance of his literary culture, farther advanced in his useful capacities than the rudely trained subjects of the old seven years' apprenticeship, who seldom gained more than a Chinese knowledge of their trades, a mere capacity for imita-

tion. But even this stolid instruction has nearly become obsolete, for apprenticeship has gone out of fashion, and we are overrun with half-trained mechanics. President Runkle, of the Boston Institute of Technology, said that he had found by inquiry that "not more than one in ten of the journeymen workers at the several trades taught in the Institute would do as good work after three years' apprenticeship and subsequent practice at their respective trades as three fourths of the pupils could *after one course of lessons aggregating* 120 *hours.*" *

Such pupils are not mere working-machines, but understand their business and easily make improvements or changes. They are competent to take a high rank in their business, and they have been saved the demoralizing influences of an apprentice life in the midst of coarse and turbulent deportment. They have also been protected from the jealous hostility of ignorant journeymen who would bar the doors against their entrance to learn a trade. They are fully prepared for life, and not, like the victims of un-

* The facility with which trades may be acquired was shown at Lane Seminary, near Cincinnati, where the students by three weeks' practice in printing made sufficient proficiency to earn $2.50 a week by three hours' daily labor. In the manual-labor school of Washington University at St. Louis, with a school-day of six hours, one hour is given to drawing and two hours to shop-work, in which they are practised in wood-working and in blacksmith and forge work. A manufacturing firm in Springfield, Mass., has adopted a system of six years' apprenticeship in which drawing-instruction is combined with shop-work. The apprentices are paid, according to their ages, five, six, or seven cents per hour during the first year, the pay being increased each year by one cent more per hour. Does not this show that if industrial schools were sufficiently endowed to give their pupils dormitories free of rent, their labor might be sufficient for the actual expenses of subsistence, if their time were equally divided between study and work? This opens a glorious educational future for our country. If we refer to the statement of President Eliot that it requires $2000 to take a young man through a college course at Harvard, it is obvious that a liberal education on the old collegiate plan is accessible only to the wealthy. On the moral and industrial plan it may be made accessible to all. But even two years of rational education would be preferable to a Harvard course.

practical education, prepared for a tedious and uncertain struggle. Even charity students have been trained in this preposterous manner. Mr.W. H Smith, M.P., spoke of a large institution in London from which children fourteen years of age would sometimes go out to obtain a situation and come back.with tears in their eyes because they found themselves unqualified for common employments.

Labor is dignified by association with intellectual culture, and may be made highly interesting and attractive; the Agricultural College at Guelph in Canada, where agriculture is learned through work, has been so popular as to have to reject 200 applications for admission recently. Democratic America has not kept pace with aristocratic Europe* in this democratic movement. The communal schools of Paris have established fifty workshops, and will soon establish more, in which each child may acquire handicraft arts. Paris has had for some time technical schools in which the pupil gives in the first year four hours to labor and in the last year eight hours to labor and two to study. Italy has 160 technical schools of art and trades, employing 570 teachers. Germany has nearly two hundred agricultural schools.

Believing that by this method pupils might be prepared to prosecute skilfully various vocations (without the dull influence of apprenticeship), I nevertheless regard these practical lessons as of the highest importance for the development of moral character and confirmation of habits of active devotion to duty. They are worth the time they would occupy simply as moral training, a training which puts them at once in possession of the manly virtues. Nor would such lessons result in literary loss, for the conquest of profligate indolence, the development of resolute industry and sense of obligation would greatly increase

* English and American aristocracy looks with scorn upon useful trades, but in Prussia the royal princes are taught trades when young, and the Emperor's private cabinet has specimens of carpentry, carving, bookbinding, etc., from his sons and grandsons.

the efficiency of students; and the experience of the State Reform School at Lancaster, Ohio, is entirely decisive, since the inmates of that institution, dividing their time equally between work and study, were at least as proficient as the youth of the common schools, in which no time was given to labor. In the British Association, Dr. Norris, who had investigated this subject, maintained that children who divided their time equally between study and work made better progress in each than those who gave all their time to study or all their time to work. It must be so, for the human constitution demands variety or change in everything, and prolonged exertion without change is destructive. If the arm is kept flexed by the flexor or extended by the extensor muscles, it is speedily exhausted, but if the muscles are used alternately, the labor may be continued several hours. We may be busily occupied sixteen hours daily with sufficient variety in the occupation. It has been fully demonstrated in schools for the feeble-minded that school-instruction does not produce as satisfactory effects in developing their mental powers as training in manual labor.

While work thus elevates the efficiency of study, it is equally true that study increases the efficiency of work. The value of the skilled laborer generally is about twice as great as that of the unskilled; and while the latter has before him a hopeless, dreary prospect of toil, which extinguishes ambition—since a bare subsistence for himself and family, alternating with periods of depression and want, is all that he can expect—the former, with twice the wages, may look forward to comfort and independence. Such is the result even where his knowledge of arts is obtained by apprenticeship or by imitation and self-teaching. The country is full of ignorant, self-taught and inferior artisans, who are generally but imperfect masters of only one occupation, and who are in continual danger of want from a decline of markets or an overplus of labor, while enlightened artisans, competent to engage in different occupations, would be

ready for any business in demand, and command the highest wages until they are ready to become master manufacturers with their own capital.

The stultifying effect of divorcing education and labor has been the greatest of obstructions to social progress. It has made artisans as stubbornly and stupidly monotonous in their methods and as hostile to improvements as governments, churches, and colleges. Hence mechanics have seldom heretofore improved their own processes. Improvements have been made by those from the outside who have not been subjected to the stultifying effects of imitative and monotonous toil. The cotton-gin was invented by the school-master Eli Whitney, the spinning jenny by the barber Richard Arkwright, and the power-loom by a clergyman, the Rev. Edward Cartwright. Steamboat-navigation was developed by Fitch, a silversmith, and Fulton, a portrait-painter, while an English farmer, named Smith, introduced the screw-propeller. Stereotyping was invented, not by a printer, but by a goldsmith, named Ged. The puddling of iron was due to a jeweller, named Cort, and the change of the flint to the percussion lock was due to a clergyman.

The intellectual success of laboring students has been due to the energy acquired by industrial occupation. Every parent or teacher knows that the brain is terribly debilitated by prolonged effort in study, which tends to debility, disease, and insanity, and that the renewed energy of the brain derived from animated exercise and amusement is so essential to health and to intellectual progress, that without their aid all schools would be broken up by the prostration of their pupils under the prevalent cramming system. "Far too much is attempted to be crammed into the unfortunate pupils," says Commissioner Wm. Wood, of the New York Board of Education.*

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* *Macmillan's Magazine* says: "The psychological mischief done by excessive cramming both in some schools and at home is sufficiently serious to show that the reckless course pursued in many instances ought to be loudly protested against. As we write four cases come to our knowledge of girls seriously injured by

It is not generally understood that the tonic power of useful occupation is more effective than that of amusement, and the most effective amusement or exercise is that in which the attention and energies are concentrated vigorously as in business. Much of the

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this folly and unintentional wickedness. In one, the brain is utterly unable to bear the burden put upon it, and the pupil is removed from school in a highly excitable state; in another, epileptic fits have followed the host of subjects pressed upon the scholar; in the third, the symptoms of brain fog have become so obvious that the amount of schooling has been greatly reduced; and in a fourth, fits have been induced and complete prostration of brain has followed. These cases are merely illustrations of a class, coming to hand in one day, familiar to most physicians. The enormous number of subjects which are forced into the curriculum of some schools and are required by some professional examinations, confuse and distract the mind, and by lowering its healthy tone often unfit it for the world. While insanity may not directly result from this stuffing, and very likely will not, exciting causes of mental disorder occurring in later life may upset a brain which, had it been subjected to more moderate pressure, would have escaped unscathed, Training in its highest sense is forgotten in the multiplicity of subjects, originality is stunted and individual thirst of knowledge overlaid by a crowd of novel theories based upon yet unproved statements. Mr. Brudenell Carter, in his "Influence of Education and Training in Preventing Diseases of the Nervous System," speaks of a large public school in London in which boys of 10 to 12 years of age carry home tasks which would occupy them till near midnight, and of which the rules and laws of study are so arranged as to preclude the possibility of sufficient recreation. The teacher in a High School says that the host of subjects on which parents insist instruction being given to their children is simply preposterous, and disastrous alike to health and to real steady progress in necessary branches of knowledge. The other day we met an examiner in the street with a roll of papers consisting of answers to questions. He deplored the fashion of the day; the number of subjects crammed within a few years of growing life; the character of the questions which were frequently asked; and the requiring a student to master, at the peril of being rejected, scientific theories, and crude speculations, which they would have to unlearn in a year or two. He sincerely pitied the unfortunate students. During the last year or two the public have been startled by the suicides which have occurred on the part of young men preparing for examination at the University of London, and the press has spoken out strongly on the subject. Notwithstanding this, the authorities appear to be disposed to increase instead of diminish the stringency of some of the examinations."

amusement of boys and girls is beneficial merely as a change which brings into play a new set of faculties and permits the overtaxed powers to rest. From such amusements they return with dissipated minds, and have a difficulty in resuming study. But from vigorous industrial occupation they return with the fixed attention, self-control and moral energy which fit them for study. From making a wagon to studying a geometrical problem the transition is not great.

But even if industrial occupation interfered seriously with literary progress, as it may when the student sustains himself by his own labor, it would be amply repaid by the good habits and moral energies which it develops. Useful industry strengthens both the intellectual and the moral powers, and is therefore essential to a complete educational development. Hence it is indispensable when we would build up the debased moral nature and the undisciplined intellect of criminals, or when we would protect the young against the tendency to crime. President S. S. Laws, of the Missouri State University, said in an official report:

"The *five evils* which like vampires are drinking up the life-blood of this commonwealth are extravagance, indolence, ignorance, drunkenness, and crime. An agricultural school so maintained that its power will be effective in fostering intelligent industry is a most proper and economical State remedy for these evils."

This remedy operates by preventing indolence and the consequent intemperance, poverty and crime, for very few convicts have been taught to be good workmen. Prof. Lieber found among 358 convicts in one prison only one in seven who had acquired a trade. The acquisition of trades, however, is not an absolute safeguard, because they have commonly been acquired amid the rude and demoralizing associations common in workshops. The acquisition of the same trades in schools would be a very different affair. Wherever industrial instruction has been established it has rapidly diminished crime, and as this cannot be said for any other system of schools, it is evident that *the indus-*

trial element is an indispensable portion of moral education.

The Prison Reform Conference, held at Newport, R.I., in August, 1877, adopted unanimously a syllabus or declaration to be presented to the Legislatures of States, in which the importance of industrial training as a moral education for the repression of crime was forcibly argued.

"To destroy the seeds of crime, to dry up its sources, to kill it in the egg, is better than repression, better even than reformation of the criminal. But, after all the best organized and best administered system of public instruction can accomplish, there will remain a considerable residuum of children (it cannot be to-day in the United States less than half a million, and probably much more) whom these systems will not reach. It is from this class that the ranks of crime are continually recruited, and will be so long as it is permitted to exist. They are born to crime and brought up for it. . . . The Conference desires to emphasize the high importance it attaches to *the industrial or professional training* of the classes of children referred to. Among the most *fruitful of crime-causes* is beyond all question *the lack of just such technical training*—in other words, the want of a trade."

"Apprentice-schools should therefore be established in sufficient numbers to insure the professional education of all such children." *

Equally emphatic was the testimony of the Conference as to the value of industrial training in reforming those already criminal.

"Whether criminals are susceptible to reformatory influences and may be lifted out of the abyss into which they have fallen is no longer an open question. Experience has demonstrated the fact, and all authority worthy of the name utters its voice to the same effect."

"*Labor is a prime agency* in every reformatory system of prison

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* Apprenticeship has been generally abandoned in the United States, but a Springfield, Mass., manufacturer has renewed apprenticeship on a plausible plan. The boys are bound for six years, and at first receive five cents an hour, which is increased until they finally get twelve cents. They also are allowed two cents an hour, payable on their discharge, giving them about $400 with which to begin business. He allows 58 hours a week to work and nine to study. This is an improved system, but not to be compared for a moment with regular technical instruction and work in a school.

discipline. It was a favorite maxim with Howard: 'Make men diligent and they will be honest.' Unless prisoners acquire during their captivity both the will and the power to earn honest bread, which can be done only by imparting to them the love and the habit of industry, the chances will be many of their return to crime after their release. But this is a proposition admitted by all, denied by none. . . ."

"The process which under these circumstances induces in the prisoner *habits of labor*, is a process by which his self-respect, self-control and self-reliance are strengthened, and this is precisely what is wanted to make him *a better man* and better citizen."

"Should it appear that agriculture, as has been widely found to be the case in Europe, is *the most powerful agent* in producing reform, it should be largely resorted to; though not certainly to the exclusion of *mechanical industry*."

If industrial training be so powerful in developing the prostrate moral nature of the criminals, is it right to confine its benefits to them? Does not the entire population need it—and does not its power in elevating the criminal assure us that it may elevate the entire population above their present plane of selfishness, competitive struggle, war, crime, anxiety, poverty, gloom, suicide, disease and premature death?

If we were governed by statesmen instead of politicians (as we might have been if the people themselves had been educated in sociology and morals) it would not have escaped their attention that it is cheaper to repair a break in a levee than to leave it open and endeavor to pump out the overflowing waters; in other words, it is cheaper to close the inlet for crime than to fight it with courts, policemen, sheriffs, constables, jailers, prisons and gibbets.

The Rev. J. B. Smith, former chaplain of Sing Sing prison, estimated the criminal population of the State of New York at 175,000; in other words, about one in 25 of the whole population is better adapted to prison life than freedom, and twelve or fourteen thousand are usually under incarceration. The criminal population of the city of New York alone imposes a burden on

the city of about $6,000,000; but even that heavy tax gives only a partial protection to society—it does not prevent theft, robbery and murder. It simply restrains what is treated as an incurable disease of society, and instead of suppressing criminality, actually fosters it by herding criminals together to make all equally base by moral infection. And yet all these men and women on whom society declares war are our brothers and sisters, unfortunate in education by our neglect, yet possessing in some degree all our best emotions, and highly susceptible of reform. The same zealous chaplain is reported as saying that after preaching every Sunday "for three years to 1500 of those who were supposed to be the worst criminals, he could say that he had greater hope of them than of an equal number of those who frequented our churches."

So great has been the success of the reformatory penal system embracing labor for the convict, that in Denmark it reduced the number of prisoners to one half in twelve years after its adoption, and one of its penitentaries was closed and abandoned. In England by the same means the number of criminal sentences to penal servitude was diminished forty per cent in eight years.

Industrial as an adjunct of moral and intellectual education is necessary to give each stability and value, to counteract the tendency to indolence, selfishness and animalism which develop and run riot where industrial and moral education are both neglected. It solves the problem of elevating the depraved and dangerous classes, and opens a brilliant future for the negro and Indian races of this country. If a tenth part of what we have expended in Indian wars had been expended in true moral and industrial education for Indian youth and for the men whose lawlessness on the frontier develops Indian wars, we might have had peace.

I cannot insist too strongly upon the absolute necessity of this industrial training, even if it did not develop the ability of the pupil for self-support. *It is indispensable to the perfection of moral character.* The whole fabric of social sentiment in society to-day is

unsound, immoral, corrupt. It is derived from the robber ages in which feudal chieftains or conquering soldiers exacted all they craved by military power, and looked upon the useful industry of ploughman and mechanic with scorn. That felonious sentiment pervades society to-day. Men respect themselves, and society respects them too, for the possession of wealth, no matter by what unjust or fraudulent means acquired, and all are ashamed of any act of physical labor in public. To carry a considerable parcel in the street or to go to market with a basket is an act from which men and women who are not day-laborers generally shrink with more shame than from the utterance of a falsehood. The scorn for labor so deeply impressed upon fashionable society is a *scorn for duty*, arising from that idolatry of brute force produced by long ages of war. This is an inversion of the moral nature, for *labor is duty*—it is the great unending duty of life, of the performance of which we should be proud, and an education which does not impress the pupil with the duty of labor is morally unsound.

All colleges have heretofore demoralized their pupils in reference to labor. They have given an education fit only for the robber baron or millionaire prince to whom literary display, literary polish or literary recreation was the chief object, military glory the most brilliant aim in life and chief theme of history, the laws of life and health a matter of profound indifference, the means of social improvement a question for the priest.

American education has not outgrown the anti-democratic spirit of the English system—more intense in England than anywhere else. "The instinctive English disrespect for a man who is as poor as a church mouse," said an English magazine, "is never absent at English schools, but the visitor at the French *lycée* cannot shut his eyes to the fusion of ranks. The most casual glance shows him the rich and poor meeting together, and there is an entire fusion of sects as of fortunes." The same spirit of equality prevails among German students (which is unknown at Oxford and

Cambridge), and any ostentatious display of wealth is looked upon with aversion.

Prof. Le Conte says: "The English University system embodied in Oxford and Cambridge not only does not claim but scorns to be regarded as other than high general culture, and the highest ideal of life, something to be sought in the past with its ignorance, rather than the future with its higher development. Even when colleges leave the old routine and devote their curriculum mainly to the acquisition of knowledge, they neglect *character*, which is much more important, and the reproach of observers against German schools which are profound in *knowledge* is that 'they have forgotten their business of *education* and train up no men for the Commonwealth.'" Alas! where are men truly trained in manhood and virtue in any country? The whole spirit of college life has heretofore been intensely unpractical, and this has been fully shown when the national bounty in land was given to American colleges for agricultural and mechanical education—a movement which has been upon the whole rather a failure than a success. The education instituted has not made superior mechanics and farmers. President Anderson, of the Kansas State Agricultural College, has shown that from 1867 to 1874 not one of the graduates has become a farmer. They were qualified perhaps to become agricultural professors, but not farmers. Agriculture was not presented as a business in which by drill and practice they were to obtain superior success, but as a matter of scientific theory. Perhaps we shall have in time the practicality of European agricultural schools—but the true industrial school is antipodal to the old college.

Systems of education that inculcate the degradation of labor are ruinous to a country's prosperity. Even if it be not expressly inculcated at college, the sentiment pervades most of the literature read by the young and is already established in fashionable society, and therefore controls collegiate life unless counteracted by labor. This sentiment drives young men in multitudes to mercantile or clerking occupations and to profes-

sional pursuits when they have no other qualification than indolence and vanity. The democratic sentiment on this subject is really more current under the German monarchy than in republican America. M. de Laveleye, in the *Revue de Deux Mondes*, says that German land-owners

"are aided by a class of employés who are not found in any other country. They are educated young men belonging to families in a good position, often just leaving an agricultural college, who remain for a certain time on some large estate to initiate themselves in the practical direction of one of their own. This novitiate is an ancient custom still preserved in many trades. Thus, frequently, the son of a rich hotel-keeper will not hesitate to enter another hotel as butler or waiter (*Kellner*), to be initiated into all the details of the service over which he will one day have to preside. When any one visits the farms (*Rittergüter*) he is astonished to see as superintendents the son of a banker, a baron, or a rich land-owner. These young people drive a cart or guide a plough. At noon they return, groom their horses, and then go and dress themselves and dine at the owner's table, to whom they are not inferior, either in instruction, birth or manners. After the meal they resume their working dress, and resume, without any false shame, their rustic occupation. Thus we find in feudal Prussia a trait of manners suited to the democratic society of the United States, and which hereafter will become general. In France, in England especially, a young man of the upper class would believe his dignity compromised in performing the work of a farm laborer."

In Vienna young ladies of the aristocratic classes are sent to milliners and dressmakers to learn to make all kinds of garments, and with equal care they are instructed in cookery by the head cooks of wealthy houses—cooking being the finishing touch of a young lady's education prior to marriage engagements. Swimming, riding and walking are also a part of the training of Viennese ladies.

Nothing but moral and industrial education can overcome that spirit of caste (based upon the scorn for labor) which is so injurious to a republic. "Caste," says Mrs. Mann, "is the deepest moral abyss that separates human beings. Education is the only thing that can abolish it morally, and it must be education, that is, *development*, and not mere acquisition, which does not educate, but may add power to evil, as well as good."

"The traditional American college," says Prof. Le Conte, "is modelled on the English system, while the ideal of *reform* in England is the German system."

"The English university system is deeply imbedded in the structure of English society, and is therefore incapable of radical reform. The English universities are essentially finishing schools for the young nobility, *i.e.*, for men who are supposed to be raised above the necessity of any life pursuit. The ideal of the English university culture is preparation for refined society. It is such a culture as befits a gentleman, and a nobleman. It is evident then that the idea of a gentleman and nobleman must be radically changed before the universities can be radically reformed."

"Everywhere in Europe, and nowhere more than in Germany, society is burdened with an unnatural and irrational aristocracy. Hence there is also an unnatural and irrational aristocracy of intellectual pursuits—unnatural and irrational, because founded on tradition and not on culture alone. To this aristocracy belong the three traditional liberal professions, theology, law, and medicine, together with the professions of scholar and scientific investigator. The so-called technical professions, though equally intellectual, *i.e.* requiring equal general culture, are denied the cognomen of 'liberal,' and compelled to seek refuge in technical schools."

This scorn of useful pursuits has been inherited from the ages of military domination and robbery. The survival of their spirit is seen in the prevalence of duelling in German universities. Efforts, however, have lately been made to suppress this duelling custom, and thirteen students of a Munich high-school have been condemned by a Bavarian magistrate to imprisonment from three to six months for participation in duels. A similar improvement is seen in the report of the Board of Overseers of Harvard University, that the practice of hazing has ceased in that institution.

Outbreaks of animalism must continue until the animal energies are provided with a proper outlet in industrial or gymnastic exercises. In English univer-

sities, according to the *Pall Mall Gazette*, "aristocratic idlers" are necessarily disorderly. "Wherever young men congregate in numbers, there are sure to be occasional outbursts of animal spirits; but elsewhere we have succeeded in preventing or promptly suppressing all outrages on public order and decency. But at the universities men are constantly being 'drawn,' held under the pump, or ducked in the fountain."

College education must be essentially changed before it can become the ally of progress and philanthropy, as it has heretofore been the ally of stolid conservatism and the reign of force. It must incorporate in itself useful labor and technological studies. It must substitute, for the mere study of reigns, struggles and wars, the study of social conditions and the true social progress. It must embrace less of mathematics (except in technical works), and more of that political economy (as yet mostly unwritten) which explains all the sources of wealth and prosperity. It must substitute for the pedantry of dead languages the knowledge of the living body, its health, diseases and culture. It must substitute for barren metaphysics the true knowledge of the soul, its grand affections, its marvellous intellectual powers, its far-reaching intuitions, and its mysterious relations to the body in which it dwells and the psychic universe which is its home. It must abolish the pedantic and tiresome stupidities of logic (which neither Locke nor Bacon could scoff out of the University), and cultivate with equal zeal the power of invention, original thought and dispassionate reason, and the Divine gift of intuition, the pioneer faculty of human progress. Lastly, it must discard theological dogma and *formal* prayers, and become truly religious with a fervent practical piety.

Some time hereafter I may show the vast power of soul development which lies in man's relation to the supersensuous world of which we have but a hint or premonition in the grand careers of heroes, martyrs, and the true leaders of the ages.

But efficient culture for any career must be a re-

hearsal or *practice*, and not a mere reading of the part. Honorable and grand careers are careers of industry, labor or struggle. The industry or labor must become a habit in the process of education, or else it will be excluded by the habits of dissipation, dawdling inefficiency or dreamy speculation which will be established in its place.

But the thought of such laborious training for youth will be repulsive to those who are familiar only with compulsory drill, and know nothing of educational attraction. The most efficient industrial training may be made far more attractive and interesting than the common duties of college life.

The various occupations should be thoroughly taught by professors, and their practice would be an interesting application of principles, like a chemical experiment made to illustrate a lecture. Moreover, the practice should be social, by friendly groups whose conversation, discussions and explanations over their work would make it interesting and give the additional stimulus of emulation to attain superior skill. Competitive groups raising beds of flowers or building fences or walls or carving wood would never lack for interest and animation.

But there is one unfailing mainspring of cheerful industry which can render the most monotonous toil pleasant, and which is indispensable to moral education—that mainspring is song aided at times by instrumental music.

Soul-stirring martial music leads men through the toils, privations, and horrors of military campaigns, but it has been withheld from the campaigns of peace. There is no labor of the farm or workshop which will not become delightful when it ceases to be purely physical and becomes an exercise of the soul as well as the muscles by enthusiastic song. To sit by the roadside and hammer a pile of stones would seem the perfection of dreary monotony, but when a group of hammering laborers engage in song, the hammers will mark the cadence of the song, like the "Anvil Chorus," and seem but a pleasant accompaniment of the song.

It is the materialism of labor that makes its stupefying gloom—the concentration of all energy upon the muscles alone exhausts the brain and debases the soul, but when the soul is active as the body, the dignity of humanity is maintained, the pleasure and glory of life are found to be compatible with labor, and it no longer debases and impoverishes the soul, but gives it a material aid.

The negroes of John McDonough, the New Orleans millionaire philanthropist, carried on their work unflaggingly throughout the day sustained by continual song, and other builders wondered at their industry. Song made their labor light, and their song was inspired by the hope of freedom which he had promised as the reward of faithful toil. A successful life will be the reward of the faithful student, and he can encounter no toil that song may not render pleasant.

ADDENDA.

The most encouraging intelligence for the friends of industrial education is the progress actually made, and the following articles from New York newspapers are deemed worthy of reproduction:

THE WILSON INDUSTRIAL SCHOOL.

In one of the most densely populated parts of this city, surrounded on all sides by tenement-houses and liquor-saloons, in the midst of every influence that could tend to demoralize a good work and discourage its supporters, the Wilson Industrial School and Mission for Girls is situated. Founded by benevolence, fostered by philanthropy, and carried on by charity, for 29 years it has endured and at last triumphed over every difficulty which such an institution could encounter. "The world forgetting, by the world forgot," its work has been unobtrusive, but wide and thorough. Juvenile crime in this city during the year 1852 was startling, and excited a great deal of comment and attention. It was evident that prosy Sunday-schools and occasional missionary visits were not reaching the undercurrent of vice and misery that unrestrainedly swept through the allies, cellars and attics where shame and degradation made their wretched home. The annals of the police courts told the nature of its flow, and a glance at the situation showed how difficult it would be to check it. But a few ladies undertook this step in the dark, and devising a new plan in a small upper room at No. 118 Avenue A, opened the first of the industrial schools which have since been recognized as an efficient agency in charitable work. They began by studying their ground and finding out the people whom they could hope to influence, and soon they succeeded in securing a few poor, ragged and unpromising subjects for their experiment. The plan was not complex, embracing morning lessons in the common English branches, a hot dinner at noon and sewing lessons afterward. The key-note of their enterprise was to repress and not encourage the tendency to pauperism. A retrospect of their work at the end of the first year, 1853, was encouraging. The institution had been mainly established by Mrs. James P. Wilson, and, in tribute to her efforts, it was incorporated by an act of the Legislature, May 13, 1854, as the "Wilson Industrial School for Girls." As its object became known, benevolent ladies from all parts of the city enrolled their names as its sup-

porters, and evidenced their determination to see it through by purchasing a building at No. 137 Avenue A, where better facilities might give it wider influence. They never lost sight of the idea which gave it birth, and, in order to silence the oft-repeated objection of parents that the simple education of their girls didn't pay, wages were meted out to those who improved their opportunities and became skilful in the simple lessons in dress-making that they were taught.

In 1869 the estate of a Mr. Rose presented the munificent sum of $20,000 to the school, and by the generous contributions of several wealthy ladies and gentlemen the large four-story building at the corner of Avenue A and St. Mark's place was purchased, and there the enterprise is at present situated. It has an average daily attendance of 200 girls, and the limits of their course of study have been very much increased. From 9 o'clock in the morning until noon the advantages of a day-school are given them, embracing a primary, an intermediate, and an elementary department, and the thoroughness of their instruction is shown by the admission of over 50 of the girls who had passed their final examination here into the grammar-schools of the city. At noon a hot dinner is served to them in their dining-hall, and, as they come from the very substratum of society, this is by far the best meal they enjoy. The afternoon is devoted to sewing and housework, the latter being taught by competent ladies under the kitchen-garden system, which Miss E. Huntington has so extensively introduced. The idea upon which the system is founded occurred to her here, while endeavoring to invent some plan by which entire classes of girls might learn housework together. It was, of course, simple enough to show a single child how to wash dishes and make up a bed, but when it came to training a large class in the innumerable branches of household art the difficulties were vastly increased. Six lessons compose the course, and in as many months a diligent student, under such experienced guidance as is furnished at the Industrial School, is prepared to offer herself in service, confident of her ability to perform the complicated details of her work, so essential to the comfort of a home. As dress-making and housework have no charms for many of the girls, the more interesting and difficult kinds of needle-work are also taught in an outfitting department. Many young ladies from the public schools come to secure tuition in this branch of the art. In fact, the sewing department of the Industrial School seems to be the head-quarters for ideas on this subject. Its teacher, Miss Louise J. Kirkwood, recently embodied her views in a book arranged for instruction, which, by a method of questions and answers, covers every department of plain work. The materials upon which the girls work are generally scraps and ends of cloth furnished through the courtesy of a large number of dry-goods houses. When the girls have made an article of apparel it is thrown into the general stock, and may be earned out by meriting a certain number of credit-marks for their diligence and deportment. Five hundred credit-marks will secure them a dress or pair of shoes,

200 a petticoat or a garment of lesser value. So that a child takes no little pride in a dress which she has been so long and patiently earning. About 700 of these garments are annually made up.

For several years exercises of a devotional character, Sunday-schools and prayer-meetings had been held in the chapel of the school, and their influence became noticeable particularly in the families of the girls in daily attendance. In 1877, the Rev. Thomas J. May, who had recently graduated at the Union Theological Seminary, was secured as Pastor, and a thoroughly organized mission was established. Its roll at present numbers about 200 communicants, and its Sunday-school has an average attendance of 400 scholars. The missionary work is vastly facilitated by the mothers' meeting, to which the mothers of the scholars are invited. Visits are made among the poor of the entire community, and every possible means is devised to carry comfort and cheer into the gloom and distress that fill the close-packed tenement-houses in the neighborhood. This practical and substantial method of carrying out the principles of Christianity has long since ceased to be an experiment and is now a success. Not a success in making money, for it has never been other than dependent on the goodness and bounty of its patrons: not a success in winning fame to any one, for its work has been done without noise or bustle; but successful in accomplishing its noble end—that of turning cloud into sunshine, woe into happiness, poverty into competence. Prominent among its Board of Managers, to whom these friendless girls are indebted for their education and acquirement, as well as for their daily bread, are Mrs. Jonathan Sturges, Mrs. Luther C. Clark, Mrs. A. R. Smith, Mrs. John L. Mason, Mrs. E. Bayard, Mrs. Robert R. Booth, Mrs. J. McLean Hildt, Mrs. R. W. Hurlbut, Mrs. George R. Lockwood, Mrs. H. H. G. Sharpless, and Mrs. S. P. Blagden.

Several gentlemen of the Union League Club have rented the large basement of the Industrial School building, and have founded a very odd feature of the list of charitable enterprises. The ladies of the school had on one or two occasions invited the little ragamuffins of the street to the entertainments given by the girls in their hall. But the boys were not willing to be entertained and give nothing in return. So they would insist on shooting beans at the teachers, kissing the girls, and in every other possible way manifested their inclination to be agreeable. After the boys were gone, chairs were found to be dissected and the anatomy of their hair cushions and spring bottoms thoroughly discovered. Tables were turned upon end, and a state of discord and confusion everywhere prevailed. Boys were abandoned and their presence tabooed in the Industrial School. But this did not suit several of the gentlemen whose wives were interested in the mission, and they determined to give the boys a chance. Chief among these were Mr. E. H. Harriman and Mr. Samuel P. Blagden. The services of R. G. Fuller were secured as Superintendent of a boys' club. They met in the largest two rooms of the mission-house. But these quarters were both contracted and unsuitable, and the large basement of the same

house was tastefully fitted up, and every night from 7 o'clock until 10 it is thronged with the little fellows. It cost several thousand dollars to start the movement, and requires about $2000 a year to keep it running. It has no connection with the Wilson Mission, other than that it rents a room in the mission-house. A library of about 400 books has been purchased, and while a third of them are used every night, owing to Mr. Fuller's system of checking the loss of a single volume is a rare occurrence. Games of every conceivable character are also provided, and are had for the asking. All the daily newspapers of the city have been courteously contributed to the club, and are every evening to be found on their files. But the principal charms of the room are the warmth, cleanliness and cheerfulness which at all times pervade even its remotest corner. One thousand six hundred and forty-three boys have applied for and received the current tickets of membership by virtue of which they enjoy the privileges of the club. And here the little fellows congregate, 300 or 400 during a single evening, and read books or papers, play chess, dominoes and checkers, and talk and laugh together, and walk around the room with as much gusto, even, as their patrons of the Union League could raise. Mr. Fuller's system of engaging the interest of the boys for their club-room is admirable. They are treated as gentlemen and have the full freedom of their room. When they overstep the bounds of decency they are quietly bounced, but they generally take too much pride in themselves to run into such a disgrace. Mr. Fuller says they resort to every kind of craft to prevent losing their tickets. Larger boys, not members of the club, frequently hang around outside ready to snatch them away. Often they are mounted on blocks an inch thick, and are sometimes strung with twine about their necks and tucked away under their shirt. Mr. Fuller regards the work as in its inception yet. Already he is preparing to open the partition between the club-room and the next, and fit it up also for the rapidly increasing demand. Numbers of the little wretches are continually asking if they can sleep there, and though the Superintendent cannot now grant this favor, the wealthy supporters of the enterprise have bade him make a sleeping department and coffee-house ready. There is, of course, no limit to the work that may be done, and there seems to be none to the generosity of its patrons.—*New York Times.*

THE LORD INDUSTRIAL SCHOOL.

The report of the Lord Industrial School and Workingmen's Public Reading-room, 135 Greenwich Street, has been issued over the signature Mr. M. Deputy, visitor of the Children's Aid Society, with which the school is affiliated. The report sets forth the excellent work the school is doing in the First Ward, and introduces pictures illustrative of the poverty-stricken condition of that part of the city, which should induce the philanthropic to afford the school the means of largely extending the sphere of its labor. "To a

stranger visiting the school and looking over the group of children," says the report, "it might seem that but little impression could be made upon the mass of degraded humanity crowded into the narrow limits of the First Ward, by means of such feeble and apparently insignificant efforts. Such a reflection is natural, but when you remember that two earnest-hearted women are day by day giving forth to these eighty, ninety or a hundred children the best and choicest treasures of their own heart and mind, and seeking to win their affection by walking before them in gentleness of spirit, scepticism as to results, in the mind of the thoughtful observer, quickly disappears. To the labors and anxieties of the school-room are also added their ministrations at the homes of the children. Thus it will be seen that at the present time—there being now one hundred and eleven on roll in the day-school, and seventy-two in the night-school —estimating five persons to a family, the teachers, by their work in the classes and at the homes of the pupils, reach, at the lowest estimate, over nine hundred persons." This is a good showing for the resources at the command of the school, and at the same time justifies their increase. "The day-school," says the report, "is now in charge of Mrs. L. E. Hector, assisted in the younger classes by Miss C. L. Van Dyck—both of whom are well qualified for the positions they hold, and of whose zeal and fidelity too much cannot be said. Mrs. S. A. Seymour still maintains her place in the night-school; for two or three years past, in consequence of the expense, we have restricted ourselves to one teacher. Mrs. Seymour wields an extensive influence over the youth of the Ward, and there are but few young girls or young men living within a mile of the school who do not know her by name."

FREE TRAINING SCHOOLS.

The free training schools of the Women's Educational and Industrial Society were first opened at the residence of one of its officers in April, 1873, for the purpose of training industrious and worthy girls and women in the various branches of female labor. Some half dozen sewing-machines were loaned by one of the large companies, and a competent teacher was placed in charge of the sewing-school. Classes in phonography, writing and book-keeping were organized and taught by ladies of the society, and an opportunity was afforded for musical practice to several young ladies who were fitting for governesses. Although very little public mention was made of the opening of the schools, the applications for admission soon became so numerous as to necessitate their removal to a larger building, and they were located at 625 Broadway, in the art galleries, which, with machines, were placed at the disposal of the society by the Wheeler & Wilson Company. The daily average attendance has been 50, and the whole number taught about 1800. The following number have been instructed or placed by the efforts of the society:—Phonographers, 20; book-keepers, 77; lace-workers, 29; writers and copyists, 63; governesses, 56; saleswomen,

83; forewomen, 39; finishers, 43; hand-sewers on fine work, 73; housekeepers and managing servants, 36. There is now on the books an order for 200 intelligent and respectable girls to work at straw-sewing, a short distance on the New Haven Railroad, where their daily earnings from the beginning of their work will be from $1.50 to $2.50. Proof-reading will be now added to the other educational branches. Daily contact with those social classes from which the army of sewing women is recruited has produced the conviction that there lies the material from which can be trained up a generation of household servants, whose excellence shall be equally advantageous to housekeepers and honorable to themselves, and to begin the training of these servants the society has removed to a suitable building at No. 47 East Tenth street, near Stewart's, six doors west of Broadway. One of the greatest evils of our social system is the uncomfortable home, which results equally from the inexperience of housekeepers and the incompetence of servants. There will be meetings of housekeepers and mothers to discuss the best means of instruction, and to insure sympathy and co-operation in the work of training. A coffee-room will be connected with the kitchen service, where good food will be supplied to those women who cannot apply to the many places for general relief which the bounty of our citizens has thrown open to the hungry, and dormitories established, not intended as promiscuous refuges, but as shelters for women who find themselves without work, money or home. Beef-tea and other suitable food for poor sick persons will be given, subject to the order of a physican. A reading-room will be open evenings, where healthy literature will be abundant, and lectures will be given upon hygiene, morals, and kindred subjects. The schools have received from private sources the sum of $3293.50. The salaries of sewing teachers and wages of porter have been $1300. All the educational branches are taught by members of the society, which numbers among its supporters some of the most charitable and public-spirited ladies and gentlemen of the city. The amount expended in the various departments of the school for sewing materials, salaries, advertising, temporary assistance to women while learning, and relief in cases of extreme necessity, has been $6,263.50.

TRADE SCHOOLS, CORNER SIXTY-SEVENTH STREET AND FIRST AVENUE, NEW YORK.

In the fall of 1880, under a joint arrangement between Mr. Richard T. Auchmuty of this city and the trustees of the Metropolitan Museum of Art, a technical school for the industrial education of artisans in the elements of mechanics and of design was established in a building specially erected and presented by the former gentleman for the purpose, and located on the block extending from Sixty-seventh to Sixty-eighth street, in First avenue.

The school opened November 1, and at once attracted marked interest and drew a large attendance. Classes were formed for

practical instruction in drawing and design, decoration in distemper, modelling and carving, carriage draughting, and plumbing, and no less than 143 pupils were enrolled. The school was open day and evening. Lectures were given by specialists in different trades and arts, but a prime feature was made of shop instruction by foremen and journeymen from different manufacturing establishments in this city.

The membership was large in view of the experimental nature of the school, and compares favorably with that of similar institutions like the Worcester Free Institute and the Massachusetts Institute of Technology, etc. The membership of the different classes was as follows: Drawing and design, 31; modelling and carving, 27; carriage draughting, 21; decoration in distemper, 13; plumbing and sanitary engineering, 50.

Since the schools were closed last spring, a wealthy gentleman of this city has given $50,000 to the Metropolitan Museum of Art to be devoted to the advancement of art education.

It has therefore been deemed best to withdraw the art classes from the building at Sixty-eighth street, and to establish them on an independent basis at Glass Hall, in Thirty-fourth street, while in the meantime the artisan classes will remain as heretofore in the former building, and be known as the New York Trade School. Thus, instead of one institution for joint instruction in design and work, New York will now have two independent schools, one for the decorative and the other for the manual arts. The former will be in charge of Mr. John Buckingham, former manager of the schools, and the latter will be under the supervision of Mr. Chas. F. Wingate, C.E., who had charge last winter of the class in plumbing and sanitary engineering.

SEWING IN A BOSTON PUBLIC SCHOOL.

An exhibition was lately given in this city of the results of the instruction in sewing in the Winthrop School—a girls' school with six grades. In the three lower grades they have lessons of an hour each twice a week, and in the upper three classes once a week. The pupils furnish their own work, bringing the material from home, the city having no expense except for needle and thread, in cases where the parents do not supply suitable sizes and quality. They are taught to sew in the best manner with rapidity; are taught the various stitches known to the artist in needle-work; are taught to make every variety of children's garments under the outer, every variety of under-garments for ladies and gentlemen, all branches of dress-making, cutting and fitting with facility, all branches of needle-work in tailoring; are taught the art of making and ornamenting table and bed linen, fancy work of endless variety, including fine lace-work and embroidery. The exhibition of work was remarkably neat and tasteful, some of it being exquisite in design. The effect of the work upon the pupils is said to be excellent in every way.—*Boston Commonwealth.*

CHAPTER IX.

THE SPHERE AND EDUCATION OF WOMAN.

Education, aims at elevation, and the ethical are the elevating powers.—Religion may be measured by the elevation of the weak and dependent.—The peculiar sphere of woman, the useful, not the pedantic.—Masculine education also should be utilitarian.—The error of imitating the faults of masculine education.—Difference in character and occupations of men and women.—Four occupations of women, matron, operative, teacher, physician.—Instruction in matronship necessary.—Necessity and neglect of hygiene.—Perverted education.—Woman's right to industrial education.—Its recognition in the schools of France and Germany.—Instruction in household duties.—Education harmonizes the sexes.—European scientific schools.—Drawing a basis of industrial education.—Woman's natural adaptation to teaching, and especially to teaching boys and promoting virtue.—Testimony of M. Gambetta and Dr. Uellner.—Masculine unfitness as shown by Carlyle.—Necessity of associating the sexes.—Demoralizing tendency of male schools.—Women in medical schools.—Healing belongs to women as much as war to men.—Practicability of preserving health.—Modern education has affected it unfavorably.—Schools should train in hygiene.—Woman's power for elevation, man's for progress.—Love the central faculty and elevating power—Its aim identical with that of education, development and culture.—Woman should control both.—Should understand life and reproduction.—She controls two eternities, spiritual in heaven, posterity on earth.—She should not be enslaved in this.—The power of propagation allied with crime and degradation should be controlled by restraint on marriage.—Woman should be protected from unwise marriages by industrial independence and the right of choice.—Wiser teaching demands greater purity and truer religion.—Dr. Clarke's physiological objections.—Unanimous testimony of colleges as to female health and the benefits of coeducation.—Superior healthfulness of female students.—Superior adaptation of girls to study.—Female education adds to our wealth of intellect and elevation of society.—All proper education beneficial.—Great advantages of coeducation.—The promotion of conjugal harmony.—Ability of females to carry virtue to extremest development.—Necessity of physical culture and complete development.

THE rightful purpose of education is to elevate the human race, and this can be accomplished only by cultivating the elevating powers. The only elevating powers are the ethical or altruistic. These elevate the individual and consecrate the outpourings of his life to elevating all who can be reached.

Such is the solidarity of humanity established by Divine law, that the elevation of self and the elevation of society are inseparably associated. This is the Divine truth, and the selfishness which antagonizes it is an absolute falsehood, and parent of innumerable falsities. Whoever in his false and deluded ambition inspired by selfishness endeavors to sustain himself simply by pulling down and crushing others, necessarily sinks himself to the lowest plane of existence and most effectively makes war on his own soul.

Hence that community or nation rises most surely which is most helpful to others, and that race in which the two sexes are most lovingly devoted to each other is destined to the leadership of the world. One of the colored alumni of Hampton College in Virginia remarked in his address, that "the true test of civilization in a race is the desire shown by that race to assist those whose position is more unfortunate than its own" —a very just remark. The civilization of men is shown in their desire to elevate the weaker sex, whose rights have everywhere been disregarded on account of their weakness. And their progress in civilization is the result of that effort to elevate the mothers of humanity—an effort which expresses the sum total of their moral and religious energy.

Ethical education must therefore comprehend the elevation of woman as one of the greatest of all duties —a duty to be inculcated in education upon every pupil, and to be realized in a higher education for woman, adapted to her nature and her inevitable career.

It is love, which, according to Jesus Christ, is the synonym of religion, which leads us to perform this duty to the weaker sex, in doing which we perform a duty to all mankind, and elevate all future generations.

Woman epitomizes or represents all future humanity, and therefore in serving her we serve the race. The proper service of woman consists in giving her not only support and honor, but development or education, and the extent to which this is given is a measure of the enlightened religion of the times.

The sphere of woman's existence differs so widely from that of man as to require a difference in education, and I should esteem it very unfortunate indeed if the present ambition of women, shown in their efforts to enter Harvard College, should lead to no other result than simply going through the old-fashioned masculine curriculum of four years, with its predominance of Greek, Latin, mathematics, and metaphysics, instead of selecting for themselves what is most wholesome and appropriate.

The value of a woman's education is tested by the public opinion of men. The eagerness with which they honor and admire accomplished women, and seek their hands in marriage, proves them to be superior women in the opinion of mankind, and we have no other authoritative tribunal. I venture to say that the graduates of the regular Harvard course, with diplomas in hand, would find themselves less admired, less sought in society or in marriage, than country girls who had obtained a good English education, and had given much of their time to proper reading—who had obtained a good stock of rosy health, knowledge of society, and familiarity with domestic duties.

No matter what the literary education may be, no woman is qualified to win our love who has not the abundant health, the exuberant spirits, the depth of feeling and the grace of manner which make her society so charming. If she loses these, or if she impairs them, not all the contents of classic dictionaries and clyclopædias can repair the loss or win that homage which her nature craves. She needs a higher education, it is true, but it should be an education to make her a more *perfect woman*, not an education to imitate men—an education to fit her real life, not to prepare her

to be a professor of dead languages or mathematics, unless that is really her vocation.

It is especially true of woman even more than of man that

> "To know that which before us lies in daily life
> Is the prime wisdom."

For woman is not by her constitution as purely intellectual or as discursively intellectual as man. She could not be a perfect woman if she lived in that vagrant freedom of restless speculation which roams over the universe, forgetting her home—which buries itself in calculations of the period of planets and comets, in exploring hieroglyphics, or constructing vast steam-engines, while society is shut out of places of study—or which occupies itself in absent-minded meditation, knowing nothing around us, or in metaphysical systems, which have no application, no utility, no available meaning. The constitution of her brain is such that she must love, must take a practical interest in persons and things, and cannot, like man, become deeply interested in things which are profound and difficult, but not useful. The profound study of mathematics, dead languages and metaphysics is therefore especially contrary to the nature and destination of woman. Let men be soldiers, engineers, mechanics, farmers, book-worms, or hermits; women have a different attraction—to home and society, children and flowers.

If the different destinies of men and women demand a different education, it does not follow that either is inferior.

The chief difference required is that the education of woman should be more directly and thoroughly *utilitarian* and *humanitarian*—that it should be less abstrusely scientific and speculative, less mathematical, less dynamic, political, military, and financial; but more hygienic, medical, ethical, æsthetic, and socially domestic. But the very things in which female education should be emphasized are also those in which male education has been signally deficient, and the

reform which is needed in our college system would bring the male curriculum very near to what reason demands for women.

I desire therefore to see the demands of the female pupil gratified in colleges of co-education in order that they may influence masculine education and lift it out of the deep and well-worn rut in which it has been making its slow progress.

I do not insist on any wide difference between male and female education, when male education shall have been properly reformed, but I do insist that female education shall be a *very different* thing from what male education *has been*, though perhaps not very different from what it *ought to be*. It is deeply to be regretted that the false ideal of male education should ever be adopted in schools for women to whom that barren ideal is so sadly inappropriate.*

Girton College (for women), in England, has followed strictly the curriculum and methods of Cambridge University, in spite of the remonstrances of the friends of progress, its directors being animated by a determination to show that women were fully able to compete with men in the struggle for the honors of what had been deemed the highest culture. The effort *was entirely successful*, and since then Newnham Hall, Cambridge, has been established on a more liberal plan, in 1875; two halls for women have been established in Oxford; London University has been opened for degrees to women, and finally the medical profession opened to women after a long and arduous struggle against the bigotry of physicians and mobocratic hostility of ill-mannered medical students. The Medical College for Women at London was opened in 1874, and in 1877 women began to receive medical diplomas

* "Mrs. Carlyle," says a biographer, "talked of her own life and the mistake of over-educating people. She believes that *her health has been injured for life* by beginning Latin with a little tutor, at 5 or 6 years old, then going to the Rector's school to continue it, then having a tutor at home. Irving being her tutor, and of equally excitable intellect, was delighted to push her through every study; then he introduced her to Carlyle."

from other colleges and examining bodies in consequence of the act of parliament which made them admissible.

Thus are the spheres of male and female education becoming identified in spite of the differences in character, constitution, and destiny. Another cause which tends to obliterate the difference is the large number of young women who are not destined to matrimonial life, or who escape maternity, and who have to enter upon the same industrial struggle as men, with the disadvantages of inferior strength and greater social restrictions, and limitations in labor. But no equality of education or competition in labor can ever equalize the sexes by obliterating that constitutional difference which is eternal and belongs to soul as well as body.

The difference between men and women is in physical force and the elements of character which belong to that force. In man the muscles are larger; the chest is larger in circumference; the respiration is deeper from the lower descent of the diaphragm, and the voice therefore deeper in tone and more powerful.

There is a difference between the male and female brain, as I have ascertained by comparative measurements of heads, which I have not seen recently stated by any author, not even by the phrenologists, who have had the opportunity to observe it. The differences are but slight in the anterior and superior regions of the head, the appearance of difference being chiefly due to the superior thickness of the bones and bony ridges of the masculine head. In plain English, men are more thick-skulled. But at the basis of the brain, which is the seat of animal life, muscular energy, passions and appetites, the male head is more amply developed. There are some masculine women who have a stronger base to the brain than some feminine men, but these are exceptions to the rule. Women in consequence of this conformation are less addicted to crime and sensuality, and more controlled by love, religion, and spirituality. They have the greater moral

and intellectual refinement which comes from the superior half of the brain. Hence their delicate, impressible emotions, quick intuitions, presentiments and psychometric sense of character. In art they have greater delicacy in light shade and coloring, and it is a remarkable fact that women are not only more delicate in colors, but are very rarely color-blind. The examination of over eighteen thousand by the Ophthalmological Society at London indicated that men were twelve times as liable as women to color-blindness. If statistics could be obtained as to the ethical perceptions, it would probably be found that men are ten times as liable to failing in the nicer perceptions of social duties.

The animal courage, restless energy, physical strength and excitable passions belonging to men indicate their sphere to be that of out-door labor, locomotion, toil, struggle, and battle. Hence, all over the world out-door employments belong to men, in-door employments to women. War and hunting belong to men alone. It is for them to clear the forests, till the land, open the mines, build the roads, sail the ships, drive the wagons and the herds, butcher the cattle, build the houses, and swing the hammer and the axe.

It is for women to occupy the house and make it a comfortable home, to prepare the food, the clothing and ornaments, the music and festivity, the gardens and flowers—to rear the young, to take care of the sick and wounded, the old and infirm—to handle the scissors and needle, the spindle and the loom, the broom and the mangle, the oven, and the innumerable varieties of food—to take care of the accumulations of industry, to keep the accounts, to manage the assistants or servants, teach the children, and last, not least, to prepare and give the healing medicines and the kind attentions that save and restore the sick.

The sphere of man is that of war and force—the sphere of woman is that of peace and gentle ministrations. Woman is intermediate between the man, the boy, and the angel. There is enough for each in their

own sphere, and if each is to do full duty, each must be kept in the separate sphere. I object to woman's intrusion on the sphere of man—I object to man's intrusion on the sphere of woman. Women generally have not gone beyond their sphere—have not really filled it—but men have intruded on the sphere of women until *they* are crowded to the wall and often driven by poverty and lack of employment to early death or to vicious lives. The greater portion of the few crimes committed by women is due to their being crowded out of profitable employment.

The employments of women are of four great classes:

1. That of the matron, who keeps a house, provides for its inmates, and rears a family.
2. The in-door operative, who carries on some form of industry.
3. The teacher, who educates the young.
4. The healer or physician, who restores the sick.

What special education is necessary for these four modes of life?

1. The matron requires especial instruction in all the arts of household economy. The preparation of food and clothing, furniture, gardening, floriculture, ventilation and warming, house-planning, the dairy, poultry, management of servants, society, conversation, music, recreation, and social morals, are all matters in which she should be thoroughly instructed. And although there are many happy homes where daughters *are* instructed in these things, there are millions in which the instruction is utterly inadequate, and *none* in which it is complete. There is scarcely one in ten thousand of either sex, at present, who understands the principles of ventilation and warming, which are necessary to health, and thousands are dying from the consequences of this ignorance—dying from colds, from pneumonia, from rheumatism, fever, consumption, and from a gradual undermining of health. Thousands, too, lose health from unwholesome cookery, badly chosen food, metallic poisons of tin, lead, zinc and copper introduced into the food and

drink—and from malaria, which a very small amount of knowledge would suppress.

We need in every school attended by women a professor of household duty and matronship, whose duty it should be to prepare women to make good wives by a thorough knowledge and practice of every matronly duty. If this were the case, and if it were rightly conducted, there might be a degree of M H., or mistress of the household, and a degree of A.M., or accomplished matron, which in the course of time would be considered as necessary for every candidate for matrimony as the degree of M.D. is for a candidate for medical practice.

The omission of household duty from the curriculum of female schools is one reason why there is so much dissatisfaction with the fashionable female education.* But there is a still more fatal defect in fit-

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* At the Lasell Seminary, Auburndale, Mass., young ladies are taught by Miss Parloa to understand cooking in all its details. These lessons are free to members of the school, and judging from the testimonials of its patrons, these lessons have proved very successful. Classes are instructed in the mysteries of dress-making and millinery. The object of the school is to make women self-helpful and independent. All communications of inquiry should be addressed to M. C. C. Bragdon, Lasell Seminary, Auburndale, Mass."

A correspondent of the *Tribune* gives her observations on this subject quite graphically:

"The first thing which suggested this to my mind was the employment of a nurse—a freed woman, or rather girl—to take care of a baby. Hearing the child cry bitterly, I went to the nursery door, and there found the child seated on the bed, the nurse standing in front, spouting and shouting poetry and prose from a book of elocution. When I expostulated with her she said, "O missus, we do have such fine exhibitions at our school, and I don't want to forget how to read these pieces in the proper way."

"What do you learn at school?"

"We learn—" and she added a string of fine names, 'ologies, etc.

"Do they not teach you to sew?"

"O no, ma'am."

"Nor to cook?"

"O no, ma'am; we have not time. We are six hours studying, and then evenings we have exhibitions and practise pieces, and parts of plays to act, and that takes all our time."

ting women with a proper education. It is the lack of physiological and medical knowledge.

Women are deeply wronged in this, that they are not educated for their chief or paramount duty in life, to which all their hopes, their affections, and their energies concentrate—the rearing of children. They are put forth to encounter the labors, the dangers and trials of maternity, often in the most profound ignorance, and a vast amount of disease and death is the

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I thought to myself, 300 boys and girls—educated! learning these things! and for what? The one cry is "Education," just as it is all over the land—and the girls are *educated*—save the mark. The girls marry: they cannot make bread, cannot cook, nor make their husbands' shirts, nor even wash and iron well. The young men admired them as "students," showing off well in exhibitions, but when they find they have neither good food nor decent clothing, they "get mad," it ends in a quarrel, they separate, and then alas for morality! All know of scores of just such cases among the freedmen of the South, where education (so called) is proving the cause of vice. The people gain mere book knowledge, and very superficial at that, to the exclusion of all knowledge of daily life, the cooking, sewing, the neatness and thrift, which make up the sum of daily life. And this is not at all, alas! peculiar to the South, or to people of one color. Many girls go on rather longer, in schools if not in colleges (we do not know where to draw the line), and it has been study, study, all their days, with "literary pursuits" between times, in the reading of sensation papers and flashy novels. As a rule—for of course there are exceptions—of the ordinary daily routine of a woman's life, sewing, cooking, ordering a household, washing and ironing, and the care of the children, they know little or nothing, and go on in the blind faith that these things will come somehow. And they often are *somehow*, as many a man knows to his cost. The man is disappointed and is cross; the woman cries and frets, but this does not teach her anything; he goes elsewhere for good food, or takes to drinking and smoking to soothe the rasped nerves of dyspepsia.

"If girls do not learn these useful things when they are young, they will, as a rule, never learn them well. Let us take a large school in New York, of which I know something, where girls of comparatively humble parentage are carried through conic sections, trigonometry, Latin, astronomy, and so forth. Suppose instead of being called out to solve a problem in algebra, they were asked to make two loaves of bread, how many could do it? Or to make a shirt? Or even to starch and iron one? And yet they will, as a rule, marry men who expect to work, and who might expect their wives to work also."

consequence—they suffer in broken health—they suffer in children that are puny and die early or die of preventable diseases, or children that are morally deformed or criminal, and a constant source of anxiety and grief to the parents, who have not known how to educate them. This physiological degeneracy, especially in fashionable life, has attracted the attention of physicians. "I determined," says Dr. P., "to find out why it was that in twenty-five years of my membership in the guild of medicine the entire physical organization of a vast number of our women should be so different from what it was when I was student." He found the cause in their defective education and physiological ignorance.

There is no greater philanthropic work in education to be found, for which future ages may be grateful, than the introduction of hygienic knowledge in the education of young women; not the mere smattering of physiology and hygiene found in some text-books, but the entire science of health, of diseases, and of management in reference to mothers and children, embracing not only the management of diseases, but the laws of hereditary descent and of moral improvement. The establishment of a department of hygiene and maternity in all female schools would be a blessing to future ages, which would compare in value with the Protestant Reformation or with the American Declaration of Independence. Our present neglect is cruelty to women and cruelty to posterity. In this matter we are violating the laws of life and most sacred duties, and the penalty falls upon society without pardon or mercy—there is no escaping the penalty of violated law.

A New York physician, who sent out 3500 circulars with questions as to whether young women in schools were instructed in female anatomy and physiology, received only five affirmative answers. "There is no reason," said he, "no common sense, no practical humanity," in our female schools generally. "Not one per cent of those who leave these schools can give a lucid explanation of womanhood, not one has the remotest notion of what true, actual womanly existence

means." The system of female education has been one of physiological ignorance and physiological debilitation by restricting exercise and amusement. A graphic writer in the *Nineteenth Century* says:

"On all sides a school-girl is shut up in a very prison-house of decorum; every healthful amusement is denied her as 'unladylike;' she is imperatively taught to curb her youthful spirits in so far as these may sometimes be able to struggle above the weight of a mistaken discipline; she is nurtured during her growth on the unhealthy soil of *ennui* in a depressing atmosphere of dulness; and, as too frequent a consequence, she leaves school with a sickly and enervated constitution, capable, perhaps, of high vivacity for a short time, but speedily collapsing under the strain of a few hours of bodily or mental activity. All this is the precise reverse of what school life ought to be. I should like to see all girls' schools professedly regarded as places of recreation no less than places of education; as places of bodily no less than as places of mental culture. At present, in most schools, with all in-door romping sternly forbidden as unladylike, all out-door games regarded as impossible recreations for girls of their age and social position, the unfortunate prisoners are restricted in their exercises to a properly prison-like routine—a daily walk in twos and twos, all bound by the stiff chains of conventionality, with nothing to relieve the dull monotony of the well-known way, and one's constant companion being determined, not by any entertaining suitability of temperament, but by an accidental suitability of height. Could there be devised a more ludicrous caricature of all that we mean by recreation? Do we want to know the remedy? The remedy is as simple as the abuse is patent. Let every school whose situation permits be provided with a good play-ground, and let every form of out-door amusement be encouraged to the utmost. Of course I shall be met by the objection that by encouraging active out-door games among school-girls, we should run off the bloom, so to speak, of refinement, and that, as a result, we should tend to impair the delicate growth of that which we all recognize as of paramount value in education—good breeding. I can only say I am fully persuaded, by the results I have seen, that such would not be the case. The feelings and the manners of a lady are imparted by inheritance and by the society in which she lives, and no amount of drilling by school-mistresses will produce more than an artificial imitation of the natural reality."

Girton College will set a better example. A visitor who gives an interesting description says:

"What few of the young ladies we are lucky enough to meet during our tour of inspection have a glow of health and life on their pretty faces well worth seeing, and fully accounted for by a

passing glimpse, through one of the upper windows, of a lawn-tennis ground below, upon which four of the students are in the full swing of a well contested game, bounding to and fro like mountain goats, and laughing as merrily as if degree examinations were things unknown."

The second class of pursuits for women is that of in-door industries, such as factory labors, manufacture of male and female clothing, printing, telegraphing, drawing and painting, photography, book-keeping, shop-keeping, and thirty or forty handicrafts.

For women who have such aims I demand, as a right, industrial education. Industrial education is equally the right of all of both sexes. It is especially the right of women because of their more delicate constitution and more limited access to profitable enagements.*

The thousands whom necessity forces immediately into industrial vocations have very little time to give to education. If they can obtain reading and writing, arithmetic, geography, and hygiene, they must go at once to prepare for work; and it will be said that the school is not the proper place for preparation—that it must be made in the shop; but this is a great error. There is very little regular and useful instruction in shops—more may be learned in one month of direct industrial instruction than will be learned in five or ten months in the shops. Even six months of industrial instruction, with proper means, will be sufficient to impart a knowledge of three or four lucrative employments, skill in which may afterward be perfected by practice.

Every large institution should have the means of giving industrial training in the occupations by which women may make themselves self-supporting and independent of the charity of friends, or of marrying for a support where they have no love.

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* The Hudson River Industrial School for Girls between ten and fifteen years of age is a worthy effort to provide for homeless girls, and those guilty of petty offences, by separate cottage homes on a large rural estate, each under the care of a matron, by whom they will be taught useful industries, fitting them for self-support, and ultimately provided with homes.

Women at present constitute a very large portion of the laboring and artisan classes, and the wealth of the nation depends much upon making their labor profitable. Educated labor is from two to three times as valuable as unskilled labor; and knowing this fact, France, England, and Germany are endeavoring, by industrial or technical education, to render their industrial classes more skilful and prosperous.

Republican France recognizes the rights of women to an equal education, and in the new system just established girls are to be instructed not only in science and literature, but in hygienics, domestic economy, needle-work, drawing, modelling, gymnastics, and the laws and customs of society, as well as in morals and such religious views as the parents desire. More than two thousand girls are already in the drawing and painting classes of the principal schools, and the city of Paris has recently opened seven new schools of design for girls exclusively. Agricultural schools have also been established for girls, which is a movement in advance of American teachers. One of these near Rouen has three hundred girl pupils, from ten to eighteen years of age, who cultivate a farm of four hundred acres under the control of twenty-five sisters; and their farming is so successful as to win medals from agricultural societies.

At L'Ecole Professionelle, in Paris, which is highly appreciated, and has had about four hundred pupils in attendance, women are taught thoroughly in dress-making, drawing, book-keeping, wood-carving, and painting on porcelain, so that they can at once earn their living by these vocations.

In England and Scotland there are eighteen practi cal schools for women in which useful occupations are taught.

As women are capable of pursuing satisfactorily at least three fourths of the occupations filled by men, there is a steady increase in the United States of women's vocations and women's industrial schools. In the School of Design at Cincinnati, recently, there were two hundred and forty-three females, a majority

of the whole number. In wood-working there were one hundred and thirty-eight females, and but seventeen males. Evidently the day of women's industrial and intellectual emancipation is near at hand.

In Berlin a highly practical school for girls has lately been established, with lodging-rooms, working-rooms and a very large kitchen. Various trades are to be taught by skilful persons in all the branches fitting for mercantile and banking establishments. The instruction in cooking is given by an accomplished cook, and young ladies resort to this school to qualify themselves for house-keeping.*

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* *Schools of Housework.*—The London *News* says: "It would be an excellent thing if some schools for young women, similar to those which have recently been founded in Wurtemberg, were opened in England, as the course of training for household duties imparted at them cannot fail to be of the greatest utility. These Wurtemberg schools, intended for the daughters of small farmers and peasants, are only open during the winter months, and each of them accommodates about thirty pupils, the fee for tuition being about twenty-five shillings, while a sum equivalent to ninepence a day is charged for board and lodging. The manageress of the school sees that her pupils are taught cooking, washing, housecleaning, etc., while the ordinary village school master is employed in the afternoon to give them lessons in reading and writing. A medical man also gives lectures on natural history and domestic medicine, so that nothing is neglected which is likely to make good housewives of them. The system of Herr Clauson-Kaas, which was first applied in Denmark, is also making its way in North Germany, though many of the masters do not much like the idea of having to teach the lads in their schools the rudiments of their future calling, for this is what the Clauson-Kaas system practically amounts to. That it might be introduced, with certain modifications, into England is probable enough, but more importance attaches to the Wurtemberg experiment, which has in a very short space of time done wonders there, and which, if it succeeded in this country, would do much to lengthen the lives of the agricultural laborer and the small farmer."

A writer in the *Cornhill Magazine* says: "I was sixteen years of age, and, according to a common custom of German families, I had to go for twelve months to what is called a cookery school, in order to learn there everything that is expected from a German housewife. This custom is not universal in Germany, but it prevails in many districts, especially in the north-western provinces. A girl may be a countess or a baroness, a clergyman's or a general's daughter, or else the child of a butcher or a shoemaker. It

In the school which the Rev. D. L. Moody is establishing at Northfield, Mass., the girls are to be taught cooking and house-keeping. Thus the industrial principle is coming into general recognition.

Industrial education not only enriches the nation beyond its rivals, but enriches and elevates the poorer classes.

This is true democracy, to elevate and enlighten the laboring citizens, and it is the only process which will guarantee the existence of our Republic. The industrial elevation of women is even more important than that of men, for in elevating the condition of women you elevate their posterity thenceforth and forever.

It must not be forgotten that this higher education is as important to the married woman as to the one who struggles for herself without a husband. There is a continual separation and tendency to alienation between the intelligent husband and the wife whose intelligence does not command his respect. Their intercourse necessarily diminishes, and the man becomes more arbitrary in his authority.

This view was expressed by a member of the French Legislature in discussing Minister Ferry's educational bill:

"M. Ferouillet thought the great remedy for matrimonial broils would be the establishment of equal rights to intellectual light. He

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does not signify how or where she has been born, or what her rank is. The manners of her country require that, whoever she is, she should know how to cook, wash, iron, to clean the rooms, mend the linen, and plant the garden. Of course I do not mean to say that all girls, even in those parts of Germany where the custom is most general, are forced to undergo this training. Yet the good sense of the majority makes them alive to its advantages. For it must be remembered that whether a woman's future life obliges her to do these things herself or not, and even if her position in the world allows her to keep as many servants as she chooses, these very servants, being German servants, expect her to know how to do all the work which she requires of them. There is only one difference between a baroness and the child of a tradesman. The latter learns the several duties I have mentioned in her father's house and from her mother; while the former leaves her home to learn the same details of domestic service in a strange house.

maintained that girls had as fine minds as boys, but that they had, owing to theological prejudice, been kept down. By granting justice to them they would be rendered apt to hereafter associate themselves with the thoughts, sentiments, pursuits, and moral and intellectual aspirations of their husbands."

In accordance with such views the cities of St. Petersburg, Moscow and Kief have ample provision for training women in the sciences. The St. Petersburg University for Women had recently more than nine hundred students.

In the unanimous exertions of European governments, by the establishment of technical schools, one principle or method is universally prominent. It is universally conceded that drawing is the intellectual basis of the productive arts. The trade schools of Germany for apprentices and master-workmen give about one half of their time to drawing, and an equal time is given in the technical universities and colleges. It is the same in France, and the French Imperial Commission pronounce drawing the most important of all studies for the technical education of both sexes.

Drawing is a very appropriate study for women—it is one in which many can excel, and, as it is the key to the useful arts, it will open to many a woman the road to independence and prosperity.

In one of the large foundries of New York, where steamships were constructed, some visitors were passing through, and a young lady stopped to tell one of the workmen that he was not finishing his work properly. He paid but little attention, and she brought the foreman, explained the error, and had it corrected. Her father was an engineer, and her experience in drawing his plans qualified her to superintend a shop.

3. Women should be trained as professional teachers because it is especially their natural sphere by divine appointment. If women as mothers are almost the sole teachers of the first seven years of life—if they of necessity as mothers give the young about one half of all the intellectual education they receive, and about four fifths if not nine tenths of all their moral instruc-

tion—if they have an especial vocation to this business, which they carry on without reward, from motives of love and duty—it is desirable that they should be engaged in the later as well as the earlier part of the task. If they are properly trained, women are preferable to men as teachers, at least for boys, for two reasons. First, oral instruction is the most rapid and delightful way of imparting and acquiring knowledge, and therefore should be the leading method in all schools. Nature designed women for oral teachers of the young, because they have more love of children, are more disposed to talk to them, and are more talkative generally than men. When the child is too young to understand anything, the woman talks baby-talk to him, and thus initiates him into language, a process which men generally do not appreciate. Although women generally do not desire to mount the rostrum in public, they make capital lecturers to their pupils. Second, education is sadly deficient in the moral element, and most boys' schools are rough and turbulent affairs, where they unlearn so large a part of their mothers' moral teaching as to make many unwilling to have their good children contaminated by sending them to school. Therefore we should continue the motherly influence by a good motherly woman as a teacher. Even if she does not teach morals directly, she has a personal magnetism, a soothing influence, like that of the mother at home. I would not confine this instruction, either, to the very young, for there could be no better method of bringing a school of disorderly *young men* under the influence of modest and refined sentiments than to give them a capable professor in the person of a lovely woman, and if they were especially incorrigible I would give them not only a female professor but an equal number of young women as fellow-students. This association gives a more wholesome stimulus than male universities know. Relying on this, they were enabled at Antioch to dispense entirely with emulation, with marks for honors or merits, and with every species of honors.

That woman is peculiarly fitted to be the teacher of

morals, manners and religion is manifest in the fact that women constitute a large majority of the church members, that they constitute the refining influence in all assemblies and in the fireside circle, and that every mother is *ex officio* a professor of morals, manners and religion to her children. It has been proven whenever women have taken charge of hospitals, prisons, and schools of reform. The female convicts of the Indiana State Prison were about eight years ago turned over to the management of Sarah Smith to test the power of womanly kindness for reformation. She now has charge of about two hundred women and girls, with eight female assistants, but with no armed guards, barred windows, or severe punishments. The inmates of this institution are generally reformed (fully 80 per cent) so as to lead respectable lives.

Of all European statesmen none have done themselves such honor as the eloquent Gambetta, by the profundity of statesmanship, when he announced in a recent speech that "pure science must be supplemented by moral teaching, which *could be best imparted by women.*" He spoke of legislative reforms, "which would give women the influence and competence to refine and civilize citizens."

Dr. Uellner, one of the framers of the present system of German education, says:

"It is quite impossible for men to teach the modern languages or the stories of history with anything like the success which women have. In the languages they do the work so beautifully, they hit upon the accent so precisely, and have such a faculty for imparting it to scholars, that it is a great misfortune that our customs forbid the employment of lady teachers for boys as well as girls. They show the same aptitude for imparting their knowledge in the middle history classes. They cannot be equalled in that delicate manner and feeling and beauty with which they tell the stories of history."

The remarkable adaptation of woman to the development of the young and to the diffusion of a happy social influence, removes all those gloomy and morose influences which render the school-room an injury to the moral nature. No woman ever entertained such

feelings in reference to education as were embodied in the gloomy confessions of Carlyle: "The despicable wretchedness of teaching can be known only to those who have tried it, and to Him who made the heart and knows it all. One meets with few spectacles more afflicting than that of a young man with a free spirit, with impetuous though honorable feelings, condemned to waste the flower of his life in such a calling, to fade in it by slow and sure corrosion of discontent, and at last obscurely and unprofitably to leave with an indignant joy the miseries of a world which his talents might have illustrated and his virtues adorned."

The situation which goaded Carlyle to despair could have been occupied by many intellectual women with content and pleasure, because to them the vocation was natural. To men of the unsocial masculine nature of Carlyle, such a vocation was unnatural, because they had not the womanly elements of character, and they would have been equally miserable and fretful if forced into other vocations of women, such as keeping house and rearing a family of children. There are so vast a number of men utterly unfit for the feminine duties of educating the young, as to make their replacement by female teachers a beneficent reform.

Women are also needed to establish good manners. Potter Palmer has proved that they give satisfaction as hotel clerks, and I think every officer who has to attend to the demands of strangers should be a woman, until we find men who can compete with them in politeness.

Is it not an impious desecration of the divine plan of humanity, that a being fitted for the highest ethical duties, the guardian of posterity, should be debased by our false civilization, driven to prostitution by poverty, and utterly wrecked by toil and privation, as so often occurs in the farm-work of England and Germany, and in their half-nude labor in the collieries of England, and the toils of the sewing-women in large cities? It is a minor barbarism also which makes a sexual distinction in the rewards of labor, and gives to female teachers in Massachusetts less than half the

salary of males. There is a great disparity in all the New England States, but to the honor of New York, Wyoming, Colorado, Nevada, Maryland, Tennessee, the Carolinas, and the States around the Gulf, they make little or no distinction in the compensation of male and female teachers.

The elevation of humanity begins in the elevation of woman, and in its highest development her position will be queenly. Her social status, like the mercury of the barometer, indicates, by its elevation, the period of sunshine and tranquillity.

The association of the two sexes is the divine order in all things. Their separation is morbid, unnatural and abortive, like breaking apart the right and left blades of a pair of scissors. Nature indicates the union of the different—sunshine and clouds are mingled—sweet and acid juices in fruits, bread and butter, meat and salt, coffee and sugar are wholesome unions. So are the sexes united, and in education women should teach boys, and men teach girls.

The Boston University took the right view in abolishing distinctions of sex, and speaking of collegiate institutions for males not as universities but as class institutions. The Universities of Leipsic and Zurich have taken the lead on the continent in the admission of women, and in the last twenty years a hundred and thirty American colleges and universities have adopted co-education.

The question of woman's admission to colleges and co-education is now practically settled in America and in Europe, but it is some time after a principle is established and the truth is known before it is obeyed by all. Class institutions, exclusive male colleges, have proved generally so demoralizing heretofore, or at least so destitute of the proper moral influence, that I think parents when they understand the matter will be unwilling to send their sons to such institutions. Not that a male school is *necessarily* injurious to moral refinememt, but that it requires a rare skill and energy in moral education to prevent it from becoming such, and that not only academic institutions but medical

colleges have been very greatly improved in their moral tone by the admission of female students, and even of female professors. Mrs. Horace Mann, in speaking of co-education, said that "Harvard College is not the place to try it in at present, for several reasons—the traditional prejudice, the want of proper arrangements, the very low moral character of the college community."

It is one of the most pleasing recollections of forty years of life in which I have sacrificed my own advancement, by supporting and introducing new truths in advance of the times, that the first application for admission of a female student to a medical college anywhere in the world, of which I have any knowledge, was made at my residence at Cincinnati, and that I immediately procured the assent of the faculty to the admission of female students. I have had the pleasure of giving diplomas to many female physicians, and at my last course of medical lectures in the Boston University, about thirty ladies were in attendance, while one of my colleagues as a medical professor was a lady who had honorably reared eleven children, and was at that time actively engaged in the duties of a large medical practice. I can safely say that all the women whom I have instructed in medicine have been a valuable acquisition to society.

The fourth division of woman's employment is that of medical practice, and when we recollect the eminent women distinguished in medicine in Europe, it is surprising that there should be any division of opinion here on that subject.

In the natural division of employments, war belongs to men—they excel in that because they have the physical force and animal courage. But the healing of the sick and wounded victims of war naturally belongs to women, because they have the sympathy, love and patience that are necessary. So far from doubting whether women should be allowed to heal the sick, I consider it as much their especial business as war is the business of men, and the only question in my mind is whether the treatment of the sick should

not be the business of women exclusively. If men were entirely excluded from the medical profession to make room for women, I believe it would be far better than if women were excluded to leave it in the hands of men alone. But neither sex should be excluded. Every city now has an increasing supply of female physicians, and I have no doubt that in time there will be as many females as males in the practice, and thus every good, intellectual woman will find an open road to a remunerative profession in which she may attain independence, fame, and, perhaps, wealth. We lose a vast deal by not utilizing our female talent. I know a family in which two of the brothers have become very successful as physicians, and I know that their unmarried sister would have been still more successful in the profession, if the fashion of the times had not prevented her adopting it.

But aside from all ideas of professional practice, every woman is *ex officio* a physician, and ought to have a medical education, whether young men do or not. She necessarily attends the sick, and in country places where the physician is seldom seen she is compelled to manage many cases, whether she will or not. Moreover, she has the entire hygienic and medical management of the young, who have no discretion to take care of themselves, and even if physicians are conveniently within reach, she has every case in full control when the cure is easy. Disease is never formidable if you keep it at arm's length, but if you allow it to seize your vital organs before you do anything, you have a battle for life. Disease is like a pickpocket—if you pay no attention to his approaches till your pocket-book is gone, it may be hard to recover it, but if you seize his hand before it reaches your pocket you are safe. The common course is to wait until the pickpocket has stolen your health, and call in the doctor to help you recover it. But if you insist on maintaining high health all the time, and resist the very first approaches of disease, you will never be a victim, and may live till you die of old age. Women are the sentinels especially over the young, and if they

were educated to do their full duty in warding off disease, there would be much less for the medical profession.

Women are so deplorably miseducated that they often think it highly respectable to be in delicate health, and no discredit at all to have their families continually broken down with disease. The plain, unquestionable truth is that health is the basis of all our usefulness, the basis, indeed, of every virtue, and that we are morally bound to maintain our health—we *have no right to be sick* when we are able to protect ourselves from the causes of disease. The *fashionable* education of women, until recently, was described by a lady, herself an eminent teacher, as follows: "From a petted plaything, woman early blossoms into an immature life, without aim or object, beyond entertainment and adornment. She is never taught the simplest detail of business by her father or brother, which might give her practical common sense. And as she knows nothing of the outside world, except what is brought to her doors, her views of life are narrowed to a very small round of petty cares."

Of the ten thousand who began life when I did, sixty-seven years ago, more than nine thousand are no longer living, and I look around mournfully for the friends of other days—the colleagues, the eminent men and lovely women who ought to be in the meridian of their usefulness now, but whose lives are transferred to another world, leaving behind the recollection of hopes unrealized, schemes and duties in progress—lives abruptly ended like an unfinished monument—two thirds before the age of twenty-five—scarcely one in twenty reaching seventy.

Modern civilization at the beginning of this century had greatly increased human longevity, which in 1590 averaged, at Geneva, 22½ years. But under our false education, this increased longevity has greatly declined, and nothing but physiological and industrial education can arrest our degeneracy.

Every college—every school of every grade—should be a school of hygiene, where youth should be trained

into perfect health as horses are trained for a race or musicians trained to sing, and trained in all the art and science of *living long* and *living well*—living to rear their grandchildren to maturity—living to see the world progressing with increasing speed to a happier and nobler life—living to realize that they have themselves done something to make the world better for their having lived in it—living until they cannot only realize that they are nearer to heaven themselves, but that heaven is nearer to the world, because the world is living on a higher moral plane to which the colleges—the colleges in which men and women unite—are elevating society.

In this grand elevating process, woman is the more important power. Man is more efficient for progress, but woman for elevation; man may lay a broader scientific basis, but woman will build higher up toward heaven. The world has just reached the stage of civilization in which woman can show her elevating power in medical science, in education and in religion. Woman's power being chiefly moral and intuitional, while man's is chiefly physical and intellectual, it follows that in proportion as society attains a higher condition, woman's powers are more appreciated and more influential. In barbarism, woman is a beast of burden, but in the highest civilization (which is not yet attained) she is the social queen.

Paris has been the most brilliant focus of European civilization, and in 1795 Napoleon wrote to his brother Joseph, "A woman has need of six months of Paris to know what is due to her, and what her empire really is."

Society is to be elevated by the omnipotent power of moral education, of which woman may be the principal channel. It is useless to talk about the equality of the sexes, for they are not and never will be equal. Man is the superior of woman in force and in science, but woman is the superior of man in that without which force and science are as utterly worthless as the rocks of a desert—the moral nature which bestows happiness here and leads to infinitely higher happiness hereafter.

The central faculty of the moral nature is love, and that is the supreme word of woman's life. It is pleasing to observe even in Russian royalty a recognition of this truth. The late Czarina, several years before her death, was inspecting the Smolnoje Institute for girls, which was under the control of Madame Leontieff, a dame of the old orthodox style.

"During the examination of the pupils, the Empress, singling out one of the elder girls, asked her, "What is love?" to which unexpected question the young lady, blushing deeply, returned no answer. Madame Leontieff stepped forward, made a profound obeisance to the Empress, and craved permission to inform her Majesty 'that in her school no instruction was imparted to the pupils on this particular subject, and that, in all probability, the girl did not even understand the meaning of the word her Majesty had deigned to pronounce.' 'That is much to be regretted,' replied the Empress; 'for woman's life is naught but love—first of all, love for her parents, then love for her husband, and lastly, love for her children. If these girls have acquired no just comprehension of love, they have been very badly prepared for the duties of life.' The Empress left the institute in manifest displeasure, and a few days later Madame Leontieff received her dismissal."

The people's colleges of the future will be devoted to this work of education, developing the physical, intellectual, and moral nature of man; recognizing the supremacy of the moral nature; placing *virtue first, health and physical power next, industrial ability third, and intellectual culture fourth.*

Virtue is but the firm and heroic expression of love.

Love is the simple *concrete expression* of all religion and all ethics.

What is the ultimate aim and result of love? It is to elevate the human race.

What is the ultimate aim and result of true education? To elevate the human race. Therefore, they are identical in purpose, as the bow and the arrow, or the hand and the pen. Love is the bow, education the arrow. Love is the hand, education the pen. Without the living power of love, education is as dead and worthless as the arrow and pen alone would be.

But we must recollect that love works in two methods—first by original development; second by culture. Which of the two is more important? Certainly it is development. If we plant a worthless tree, no culture or pruning can bring valuable fruit. Development and culture both belong to woman, but she has not been taught nor even permitted to control either.

Now I would claim for her—and, if I could, would enforce the claim with all the fiery earnestness of Demosthenes—that she shall be educated *to control both* —that the leading study in all her education, to which all other things should be tributary, should be the laws of reproduction—the science of life in all its ramifications of health and disease, happiness and misery, virtue and vice—but above all the science of the endless life of the human race on earth.

Rightfully she should study profoundly, in all the light of philosophic religion, the salvation of her own soul—the development of that eternal life which has its fruition in the mansions not built with mortal hands—but she cannot rightfully attend to that form of eternal life and secure eternal bliss without attending also and equally to that other form of eternal life which is realized on earth—for she is identified with both.

The beautiful young mother who appears before you to-day is mistress of two eternities—spiritual and maternal. When her beautiful form has mouldered into earth the two eternities begin—the eternity of the spirit which has passed from her temporary body to the high companionship of angels, and from that high realm looks down on the lasting if not everlasting succession of human forms springing from her own person and reproducing her own features and sentiments through all time.

With that eternal procession she is identified, for it is a part of her own being—a part for which she is responsible—the glory or the shame of which, the happiness or misery of which, is hers forever, and therefore she has a right—a right higher than artificial

governments and laws—a divine right to control these two eternal currents of destiny into which her own life expands.

And it is impossible for her to perform rightly her duty to her own eternal soul-life in heaven, except in performing her duty in that procession of life on earth—a duty which is paramount to all other duties, and which every mother feels in her deep devotion to her child. To that child she is willing to sacrifice her life, and rightly too, for her own life is but a single stream, but the life on earth from her expands into a thousand streams and ever-flowing fountains.

Therefore, it is unquestionable that woman should be the sole arbiter of maternity, and all laws which render her in this subordinate to the will of another, either by physical force or any other form of compulsion, are cruel and debasing tyranny—debasing to her and to the human race. The sentiment which teaches that woman is simply a breeding animal for the pleasure of her owner is devilish in its origin and devilish in its debasing influences on society, for next to intemperance it has been the chief source of a demoralized and criminal population, and the fetter that leads her to this degrading position has been *financial dependence*, or, in other words, the lack of industrial independence and self-supporting ability.

The mightiest cause of human degradation, greater even than alcohol, is to be found in our false education, customs and laws on this subject.

Society and governments proceed as if there was but one danger to be dreaded—the fear that the human race would die out for want of propagative power—whereas it is notorious that the propagative power of all animal life is superabundant in man as well as animals, and if it had not been for war, famine, and pestilence, the human race might have filled a hundred such worlds as this if they had been accessible.

This terribly grand reproductive power conserved by law would soon fill all continents and compel the universal destruction of infants as the only mode of avoiding famine. The curse of society has been the

reproductive power of evil—the reproductive power of crime, animalism, and pauperism. Our social system breeds a mighty army of paupers which in some countries has amounted to onetenth of the entire population, and decrees that pauperism shall be propagated. It breeds a mighty army of criminals whose propagation is encouraged. It breeds a mighty army of drunkards and gives them a tyrannic power over helpless women to propagate their detestable vice faster than the hand of death can remove its victims.

It puts a premium on imbecility, disease, and physical inferiority by exempting them from the exposures of war, and selects for carnage the ablest and bravest men—for parentage the most wretched.

And as if all these methods of degradation were insufficient, medical science actually assists the deterioration by prolonging thousands of wretched lives to aid in the transmission of hereditary disease and inferiority through *marriage*, for which they are unfit.

All this is wrong as wrong can be, and we need a social movement against this race degeneracy by propagation of evil as much as against the degeneracy by alcohol, gambling, and war. We need to *discourage* instead of encouraging marriage. We should surround it with every legitimate barrier. We should require as a prerequisite to every marriage sufficient evidence of good habits and of ability to maintain a family without increasing pauperism and crime. We should also require, at least in the woman, a thorough knowledge of the physiological and hygienic principles involved in parentage and the care of the young. No matter how many may be excluded by these precautions, the more the better. The production of children should never be encouraged except in those who earnestly desire to have children, and whose affection can be trusted to do their duty fully to their offspring. Some of the Northwestern Indians are wiser than the white men—they require the suitor for marriage to have a good temper and good character, to own a dozen horses, to be able to support the girl and her family too, if necessary, and to give his mother-in-law

a dowry. Before he gets a handsome wife he has to give a gun and two horses, besides blankets, cloths, and provisions.

Marriage being thus restricted, and woman being fully educated in her duties and rights, she would not tolerate parentage from any man stained by intemperance, crime, or any other debasing characteristic. To enable her to perform this duty of protecting posterity she should be enabled by law to obtain a speedy relief by divorce from any one unworthy of the sacred position of husband and father.

I know there is a morbid puritanic sentiment which is hostile to divorce: every bigoted and dictatorial sciolist in morals bewails divorce as a moral calamity instead of bewailing the wickedness which made divorce a necessity. As well might he mourn over the surgeon's knife which amputates a mangled limb, instead of condemning the brutal violence of the mob in which the limb was mangled. Divorce is conservative and not destructive. Instead of regretting the number of divorces, I regret the reluctance of women to seek divorce when justice demands it, as I know that thousands wrong themselves by their submission to moral and physical evil. And I regret still more the miseducation of both sexes and the helpless ignorance of young women which renders marriage a matter of blind impulse and often of life-long sorrow. Every divorce is a blessing to posterity by checking the increase of discord, malice, and crime. I have been informed of a case in which a woman had a husband who meanly withheld from her the means to purchase absolute necessaries, even the clothing for her babe, and who, instead of escaping from his tyranny, submitted to the imposition and procured the necessary money by stealing it from him. Her taking it was a right, but it was in the method of stealing, and that maternal stealing made her child permanently a thief. In many such ways is crime fostered by hindering divorce.

Therefore I say encourage and facilitate just di-

vorce and discourage all production of unloved, undesired and contaminated children. The man and the woman who adhere to celibacy from indifference to offspring or from consciousness of their own defects have performed well their parts and negatively done something to diminish the sum of human evil—that mighty social evil which consists in overwhelming the good and true beneath the flood of selfishness, disease, worthlessness, animalism, and crime.

The world's welfare demands that woman should be educated to resist evil and to protect herself from the debased classes. First, she should have the industrial education to make her independent and strong in herself to resist. Secondly, she should have the broadest and deepest psycho-physiological education to qualify her for her grand position as the mistress of two eternities in heaven and earth.

But before this can be done we need an immense purification of the moral atmosphere. We need that enlightened purification of soul which is obtained by the experience of maternity, which is obtained by the study of the healing art in the temple of anatomy—which is obtained in the studies of the highest art—that purity which is found in the experienced mother, the faithful physician, the inspired artist, and which is found in the highest perfection in the angels of the higher heavens, who know nothing of impurity, should be diffused in the public mind by religious, artistic, and anatomical education, until the highest functions of life, which link mortal clay with divine wisdom, may be studied by all as the chart of our voyage from social degradation to the heavenly life on earth.

It is for this true fulfilment of her proper destiny that woman should be educated. Justice demands it, common sense demands it, the spirit of liberty demands it, science, philosophy, and true religion demand it—the voice of Him who died on Calvary still demands it, still demands that love shall rule the earth and children shall be reared for heaven.

But sceptical pessimism interferes, and, the wish be-

ing father to the thought, declares there is no practicable way for woman to reach a better and essentially different condition.

The ability of woman to take a prominent part in intellectual labors and college life has been questioned by Dr. Clarke, in his highly sensational book, entitled "Sex in Education," which suggests that the constitutional infirmities of women are so great that their health is undermined in colleges to an extent that should occasion "great alarm" to the human race, and that before women can safely attain collegiate educations it will be necessary to make enormous changes in our college system, such as would probably cost Harvard College two millions of dollars to fit it for teaching women without destroying their health. This he says in conformity to that *pessimism* which has been so long the bane of the unreformed medical profession, and in utter defiance of the fact that women are successfully carrying on their studies in company with men not only in medical colleges, where the hardest study is enforced for ten hours daily, and where the incessant application and confinement often impair the health of students, but in our finest universities and colleges, in Boston University, Cornell University, Michigan University, Lombard University, Oberlin and Antioch Colleges, and Eminence College,* from which we have reports, and many others of which I have not the statistics. From all these institutions the testimony is entirely unanimous that the co-education of the sexes has not only been of

* As an illustration of the practicability of making colleges for women hygienic, I would mention that at Eminence College it has been common to observe a very marked improvement in the health of the female pupils. A physician of eminence who brought his daughter to this school thought it would be doubtful whether she could continue her studies, as she was in bad health, and had been on that account withdrawn from other schools. He required the privilege of withdrawing at any time without further charge if her health required, but after engaging in the cheerful studies and exercises of the college for three months her health was permanently restored, and her weight increased twenty-five pounds.

great moral benefit, but has been beneficial in reference to scholarship and all the objects of a college.

In all these colleges and universities engaged in the co-education of the sexes there is no authentic account of a common failure of health in female students. On the contrary, the statistics, so far as reported, show that the attendance and scholarship of the young women equal those of the young men, and that their health also is equal, both in college and in after life.

In these colleges and universities there are no special and peculiar arrangements to enable women to have an easier time than men, for no such arrangements have been needed or desired. The statement of Dr. Clarke, that suspensions of study for female students on account of their peculiar infirmity are common in European schools, is contradicted by the explicit testimony of gentlemen from England, France and Germany.

What does American experience prove? Oberlin College has been in operation over forty years. We have reports of its graduation of 579 men and 620 women. It was ascertained in 1873 that the mortality of the male graduates had been 10 per cent of their whole number, and that of the female graduates but 9 2-3 per cent. At Antioch College the mortality of the female graduates had been 9 3-7 per cent, while that of the male graduates had been 13 1-2 per cent. These mortalities are exclusive of anything belonging to the war. The Rev. Olympia Brown, who spent four years at Antioch, says: "All the time I was at Antioch College I never heard of a young lady in the college requiring a physician's advice. If you should take the whole number of women in this country who have graduated from a regular college with men, and place them side by side with the same number of women who have not had that course of study, select them where you will, the college graduates will be stronger in mind and body, able to endure more and work harder than the others."

The reports from Vassar College for women show

that, instead of breaking down under study, the general health of their graduates in 1871, '72 and '73 was better on leaving the college than on entering. Mrs. Caroline H. Dall, of Boston, says that "at a meeting of the American Association for the Promotion of Social Science I drew attention to the superior health of the girls of Vassar. I pointed out the fact that the health of the girls continued to improve to the hour of graduation. The world may be challenged to produce in any one neighborhood 400 young women of so great physical promise." Miss Carpenter, of England, after a visit to Vassar, said: "We must admit that they have superior health."

Mount Holyoke Female Seminary has had, during thirty years, 1213 graduates, with 126 deaths, or 10.39 per cent. Let us compare this with the mortality of seven New York colleges for males: Harvard, Yale, Antioch, Williams, Bowdoin, Brown, and Dartmouth, in the same length of time, had 11,246 graduates, and 429 deaths, or 12.7 per cent. The female mortality seems to have been not quite 82 per cent of the male mortality.

The entire mortality of the graduates is remarkably small, which coincides with the fact that the health and longevity of the educated class generally are known to be superior to the average health and longevity of the entire community.

President Seelye, of the Smith College (Northampton, Mass.), said in his inaugural address (1875): "I bear witness from a personal observation of two years at Amherst that the health of the students as a rule improved from freshman to senior year. Again and again have I seen puny, weak freshmen toned up by Dr. Hitchcock's judicious training so that they graduated strong, well-formed men, and the first scholars in their class also. There is no reason why a similar improvement may not take place among young ladies."

Experience shows that this improvement does take place in young ladies perhaps even to a greater extent than among young gentlemen. And as the sta-

tistics are certainly rather more favorable to female students, we need not be alarmed at the diffusion of collegiate education for women, but we may well be alarmed at the vast number of half-educated women who lose their health because they know so little about preserving it.

When Dr. Clarke announced that it would probably cost two millions of dollars for Harvard University to adjust itself for teaching women on his plan without killing them, he did not intend to burlesque his own theory by this fantastic statement. His zeal in defending the course of Harvard College and sundry medical colleges opposed to co-education greatly outran his discretion, and hence his book reads much more like the sensational book of a novelist than the sober truths of physiology and experience. Its statements are contrary to all college experience in this country, and seem to have been prompted by that philosophic *pessimism* which regards education not as a normal process of general improvement, but as an exhausting process dangerous to health and life.

These gloomy views have been very beneficial in bringing out a full demonstration of woman's capacities in education.

Under the light now shed on this subject there can be no excuse for closing the doors of any educational institution against women, where it is thought desirable to maintain gentlemanly habits and moral influences. The carving of benches with pocket-knives, covering the floor with pools of tobacco spit, and the walls with coarse obscenity, the coarse language, noise, turbulence and tumultuous rushing at the door, which often distinguish medical colleges, show how much they all need the presence of women.

The overflow of animal spirits and vivacious impulse in girls takes a different direction from that of boys—instead of hazing a new arrival, they overwhelm her with kind attentions. At a Presbyterian Female College in Ottawa, Canada, the young lady students learned that a poor woman who supported herself and children by washing was laid up by sickness, and went

to her house the next morning, did the washing and ironing for her, and sent the clothes home.

It is very true that some female constitutions have infirmities unfavorable to hard study, but it is equally true that male constitutions have faults also that are still more unfavorable to hard study. The predominant animality or animal force of the male brain is a condition more unfavorable to study than any peculiarity of the female constitution. The great difficulty of teachers in primary schools is to subdue this restless animality so as to give the moral and intellectual faculties fair play, and inspire an interest in intellectual pursuits instead of mischief and sport, without too much severity and confinement. This is the major hindrance in education, and all teachers will agree that there is less of this among females. Hence, if education is simply hard intellectual labor, women are as favorably equipped by nature as men. Mrs. Prof. Jackson, of Boston University, said: "Does not every teacher of boys and girls know that girls, as a rule, take less time to commit their tasks than boys?"

Prof. Orton, of Vassar College, said in his address to the National Educational Association, 1874:

"It has been doubted whether a true collegiate standard could be maintained in a woman's college. It has been done at Vassar for eight years; and the faculty have yet to receive a petition for a lower standard. The average student does not exhibit any peculiar weakness before the highest problems or the deepest lectures. She masters trigonometry quite as readily as young men; she determines an eclipse, not in a girl's way nor in a boy's way, but in the right way; and she has a special aptitude for the languages, such as in a Yale student would be called a marked linguistic talent. (Our German teacher, who has taught in Germany, England, France, and Switzerland, declares she has nowhere found students to grasp so readily and eagerly the literature of the language as at Vassar.) In the class-room girls are superior to boys of the same age. They are eminently docile and respectful, earnest and enthusiastic. Their diligence, clearness, and positivity, their minute accuracy and conscientiousness, are beyond all praise. Very few of our students attempt to recite what they do not know—a frequent farce in masculine colleges. Their receptive faculties are wonderful. I have never seen students in any college who could imbibe such a quantity of learning."

The *Nation*, speaking of an examination at Vassar, said, "The superiority to young men was very perceptible." The New York City Superintendent of Education says in his report for 1881, that the female grammar-schools show from two to six per cent better average in all branches than the male.

Such testimony does not show that there is no difference between the aptitudes of men and women, but does show that women are entirely competent to conquer any difficulties and attain whatever may be deemed the best education. It is not at Vassar College only, but everywhere that co-education has been tried, that we have evidence of the equal capacity of young women in all studies.*

Dr. Palmer, of the University of Michigan, said, "The women in the classes in the University of Michigan were fully equal in ability and capability of receiving instruction to young men." Prof. Olney made a similar statement.

President Read, of the Missouri University, said that "in the system of prizes and honors these young women have carried off more than fifty per cent above their proper share. A woman student bore off the highest honor in the graduating class of this year" (1874).

Prof. Proctor and Mr. Galton speak very highly of woman's aid in science in consequence of her exact memory of details and minute observation.

The attempt was once made in the examinations of the London University to act upon the theory of a serious difference in the sexes. But the women desired no difference, and the examiners finally found it best to give up the theory.

Harvard University, which instead of co-education has cautiously ventured to educate woman by an An-

* Prof. J. P. Postgate, of Cambridge and London Universities, says (April 9, 1882): "Our Council are completely satisfied with the results of opening the classes to women. Both at Cambridge and at University College the women not infrequently beat the men in the lists." At that time, he said, there were about 150 women studying at Cambridge.

nex, is gratified in the results. Dr. Peabody, the Harvard Professor of Ethics, says:

"There is, I think, on the part of our academic Faculty, entire satisfaction with the working of our system for the education of women. The young women who have been students are, I am inclined to think, without an exception earnestly engaged in their work, capable, and some of them exceptionally apt and able scholars, and seeking connection with the university for no other purpose than the enjoyment of superior educational privileges. Their teachers are in the highest degree satisfied and gratified with the year's work. The experiment has—I am surprised that I am able to say so—no results that can be quoted for or against the co-education of young men and young women. There has been hardly more connection between the college and the 'Annex,' so called, than if they had been a hundred miles apart. The apartments occupied for the young ladies' classes are at some little distance from the college, and the young ladies have been altogether absorbed in their work, and so little disposed to court or invite notice from the outside world that their presence in Cambridge has hardly been recognized, except in their boarding-houses and by their teachers."

To quote further testimony would be superfluous. What we have already considered must gladden the heart of every philanthropist, by displaying the vast resources of intellectual power which have remained under the conservative system undeveloped.

For uncounted centuries the intellectual inferiority of women has been conceded and has been the basis not only of cynical jests, but of unfriendly legislation and exclusive masculine privileges and advantages in the struggle for subsistence.

In view of the results of a fair trial, we have a duty to perform—for no one can controvert the position of President White, of Cornell University, that "it is a duty of society to itself—a duty which it cannot throw off—*to see that the stock of talent and genius in each generation have chance for development, that it may be added to the world's stock and aid in the world's work.*"

In addition to all the considerations of political economy, as to industrial progress and national elevation, we need the intellectuality of women to elevate the tone of society. Society is the summer sun for the development of intellect, but it develops weeds as

well as flowers. Heretofore men acquired a disgust for intellectual pursuits in their perverting education, and women were left ignorant of all great themes; hence society throughout the civilized world has been marked by frivolity, shallowness, gossip, and what a man of intellectual life would call refined vulgarity—what a Christian would call its selfish worldliness.

In vain does education or native worth raise a few to a higher life. Whether men or women, they feel that they are by their tastes and sentiments isolated from the crowd. Or if with a strong heroic will and sense of duty they desire to elevate society, they are made to feel as Pestalozzi felt—as "a coal of fire lying in wet straw."

The total revolution in society when women and men are alike thoroughly educated will render society itself a continual educational power, in which the progress of the true university will be prolonged through life. In conversational discussion and fireside enlightenment, women will often lead toward higher themes by their superior delicacy of moral sentiment, and the equality of intelligence will not only promote a greater sympathy and love in the home circle, but lay a better foundation for harmony in the sincere respect felt by a husband for the intelligence of his wife, and her ability to make his fireside more interesting than the club or any other masculine resort.

The Clarke theory which is brought forward to impede this consummation is fundamentally false; not only as to the assertion of female inferiority, but in its grossly animal views of psychology—in asserting that sexual difference is due exclusively to the sexual organs—that no difference exists between the boy and girl before sexual pubescence, nor between the old woman entirely past the child-bearing age and the old man—assertions so contrary to the knowledge of every woman as to need no refutation.

The great practical fallacy of the Clarke doctrine as to education lies in the assumption that education is necessarily a fatiguing, exhausting process which

requires a strong constitution to endure it—a doctrine which could be maintained only from a college in which the fundamental principles of education were not understood.

All proper normal education is beneficial and invigorating to both mind and body; nothing in anthropology is more certain than this. It is only an abnormal system which cultivates the intellect alone, and thereby destroys the normal balance of life—which, in addition, by adhering to old and barbarous methods distorts and fatigues the intellect instead of giving it a healthful development—of which we can say that it is a tax upon the constitution requiring robust health to endure it, while true education improves the health, or, as Prof. Orton, of Vassar, says, "hard study is a tonic" when rightly directed.

The whole of the terrific evil against which Dr. Clarke demands two millions of dollars to protect one university exists only in imagination or in a false system of education, and a college which cannot educate the mind without impairing health ought to forfeit its charter and terminate its existence.

If there are women in the more effeminate, indolent and dissipated classes of society who have inherited feeble constitutions, so much the greater necessity that they should be sent to a true college, where their minds and bodies could be developed healthily together. Granting all of Dr. Clarke's assertions as to female infirmities, and doubling their amount, it would only show the greater necessity for a true education of body and mind, and the necessity that colleges which destroy health should be revolutionized or destroyed themselves. The assertion that Harvard University cannot teach women with its present arrangements without destroying their health, coming from a medical professor of Harvard, amounts to a fatal confession of incapacity and misconception of the philosophy of education and hygiene equally discreditable to both the medical and the literary departments, and shows that great universities may be to-day, as they were two hundred years ago, the strongholds of

antiquated errors and fortifications against the progress of enlightenment.

But conservatism has lost the battle, and the overwhelming majority by which Cambridge University decided to admit women to university education, and to adopt Girton and Newnham female colleges into the university system, may be considered the end of the battle.*

President Angell, of Michigan University, says in the report for 1879:

"We have become so accustomed to see women take up any kind of university work, carry it on successfully, and graduate in good health, that many of the theoretical discussions of co-education by those who have not had opportunities to examine it carefully, read strangely to us here on the ground. It is a cause of sincere congratulation that, both in this country and in Europe, the opportunities for women to obtain as thorough and extended an education as men are rapidly multiplying."

The painful and laborious theory of education is no greater error than the monastic theory of isolation to prevent social profligacy and rash marriages.

Universal association of the sexes is the order of nature. Isolation is unnatural and evil. It aggravates the faults of each sex, rendering men more coarse, violent and sensual, women more timid, imaginative and childish, and more apt to yield to fanciful and absurd attachments, or to the arts of the seducer, while men become more passionately impulsive and ready to form alliances which judgment does not approve.

Isolation is the system that encourages profligacy and endangers the happiness of both by rash alliances. Familiar daily association removes all the glittering illusions of imagination in either sex, and at the same time subdues the sensual impulses which are fostered by solitary fancy. The intercourse of intelligence, politeness and respect, especially the respect elicited

* England had in 1879 eleven colleges for women, including the School of Medicine in London, and over a hundred high-schools for girls. London University makes no distinction between males and females, and at the examination for matriculation July, 1879, the number of female candidates was 868.

by superior intellect, elevates the sentiments above the plane of animality, while it furnishes that just appreciation which is the proper basis of friendship and love. Experience in co-education confirms these views. "The young ladies of mixed institutions," said Prof. Hosmer, of the Missouri University "are delicate, sensible, modest as a class, their womanliness in no way touched except to be confirmed; young men, on the other hand, are brave and vigorous, in no way emasculated."

Jean Paul says: "To insure modesty I would advise the education of the sexes together; for two boys will preserve twelve girls, or two girls twelve boys, innocent amidst winks, jokes and improprieties, merely by that instinctive sense which is the forerunner of natural modesty. But I will guarantee nothing in a school where girls are alone together, and still less where boys are."

It would not be a delicate or pleasant subject to rehearse the many stories that are told of schools exclusively male or exclusively female.

Even the necessary separation of the sexes in our present mode of life is the source of great evils in mutual ignorance and rash alliances fatal to domestic happiness and destructive of that love without which no virtuous family can be reared.

President Warren, of the Boston University, rightly spoke of the disjointed system which separates the sexes as the enemy of home and foe of civilization.

The world is full of blighted homes and homes in which the high happiness of love is unknown.

To prevent their increase we need higher education and industrial education for woman, that she may feel strong in her independence and shun every unhallowed union.

Maidenhood dignified by intelligence and efficiency should be more honored than it has been. Works of philanthropy are ever in need of laborers, and they may be most readily found in the ranks of maiden women whose zeal and kindness in the care of the sick and young are among the richest possessions of society.

Whether as maiden, wife or mother, woman needs the highest education possible in the limited time of her minority, and when she receives this justice from society, she will help society onward to a true civilization.

This higher culture of woman is a great social necessity. There is no real progress for humanity which does not take its rise in the moral influence of the family, and that moral influence consists essentially of love. But the basis of love is respect, and even where great love does not exist, mutual respect is the source of the concord and peace which make a blessed home. But respect must be elicited by actual worth, and the cultivated intelligence, the nobler deportment of a woman *rightly educated*, competent to guide everything in her sphere, will command and retain that *respect* from her husband and children which is the basis not only of courtesy but of love.

From mothers thus respected and cherished, competent to form the minds and manners of their children, a nobler future may be expected.

A school of females is a nursery of all the virtues for humanity. Under the elevating influence of song its moral atmosphere becomes heavenly. There is no difficulty in attaining the pitch of virtuous sentiment required. It is even possible to go beyond the normal limits in cultivating the tender and disinterested sentiments to the sacrifice of the animal passions and forces that sustain physical life until the appetites demand too little food, and the muscles are too quiescent for a healthy vigorous constitution.

It is necessary that energetic physical culture should be maintained by the various forms of industry and by out-door sports and exercises to develop the physical basis for the nobler sentiments, for a broad foundation is necessary to a noble superstructure. The tendency to anæmic nervousness and hysteric excitability should be entirely destroyed in education by the development of rich, abundant blood, strong muscle, and power of endurance. A proper full-orbed education develops alike soul and body—intellectual power, practical capacity, physical endurance, longevity, cheerfulness, and exalted virtue.

CHAPTER X

MORAL EDUCATION AND PEACE.

Power of moral education to establish universal peace, in which religions have thus far failed.—War the result of education and habits of thought.—Does Christ or Moloch control our civilization?—Military force and military sentiment of France.—America a refuge for the European race.—Satanic life of the soldier.—Von Moltke's glorification of war.—Continual imminence of war in Europe.—German, French and Russian militarism.—Ruinous injury and cost of war in America and Europe.—Italian war and poverty.—War and famine in India.—Military passion of political rulers.—Religion must repress national brigandage.—Horrible incongruity of Christianity and war.—Possibility of universal peace.—Education to be changed and the splendor of war abolished.—Moral education will harmonize nations.—Moral education may exorcise the spirit of war as cannibals have been civilized and the wildest savages reformed into good citizens.—Great power of Kindergartens.—True religion, the source of universal peace, worth more than all mechanical discoveries and financial wisdom.

THE great and final triumph of moral education will be in the establishment of peace on earth and good-will among men.

All religions have failed to do this—either because they have not sufficiently condemned war (or, like Mahomet, they made war) or because their inculcations were too high and pure to be incarnated in any church. It is painful to reflect how completely the followers of Christ have renounced his principles to indentify themselves with war.

I would not say a word to depreciate the value of that religious inspiration which has been a potent influence for civilization and humanity in Europe, but I must insist that *thirty years of true moral education* would do more for humanity than nineteen centuries of religious propaganda, aided by colleges, schools and literature, have already done.

I am sure that neither war, nor poverty, nor pestilence, nor crime is a part of the eternal order of society, but that these evils belong to the childhood and infancy of the race. A true philosopher with arbitrary power for twenty years might abolish all these evils wherever that power extended. Pestilence should be abolished by hygienic science and education, poverty by industrial education and science, war and crime by moral education.

Crime and war are not ineradicable, for they do not always depend on a criminal organization or malignant passions in the criminal, but rather upon false sentiments and delusions originating in ignorance, barbarism and ferocity, but transmitted to succeeding generations in accordance with the law of perpetuity of physical and moral forces. The automatic or unconscious elements of human nature perpetuate every mode of action or thought once established, and dominate over all individual peculiarities by the entire force of society. The men who burned witches, and who tortured prisoners in the dungeons of the Inquisition, were not essentially different from their more humane successors, but were dominated by falsehoods which controlled their humanity; and the men who engaged in human sacrifice in Mexican temples belonged to a peaceful and amiable race.

The blind element of automatic action called instinct or habit is powerful in inverse proportion to the intellect, and hence dominates over animals so far as to leave but a limited educability. The blind element maintains the old, the luminous intellectual element introduces the new. The latter ever proposes changes and improvements which the former forbids, and thus prolongs the crudities and falsehoods of the past. Hence in all civilized society we see institutions, usages, and even sentiments holding their ground firmly among the masses which are in contradiction to the highest intelligence of the period.

Thus is war retained in the animal nature of man, and claimed as a national creed even after the majority of the population have outgrown the savage pas-

sions which demand it. It is retained as a supposed necessity, a matter of national glory, national protection and patriotism, under the fixed conviction that foreign powers are necessarily hostile. To change these convictions—to enlighten men as to their universal fraternity, to promote international friendly intercourse, especially in education, and to supersede the admiration of war, generated by means of dazzling histories, with faithful pictures of its horrid nature, would destroy that lingering sentiment by which war is admired, tolerated and retained.

Under such an education the press and pulpit would pour forth such denunciations of war such luminous pictures of its horrors, as would render it impossible, and compel the organization of courts of arbitration for all nations.

It cannot be very far off in the future that the cry for peace and for arbitration will arise from the victimized *proletariat*, as well as from the more enlightened and from the great religious teachers who are yet to come, and whom the law of evolution and progress must bring forth. Even now, a great orator with power to move men's souls and touch the fountain of tears might bring all statesmen to deliberate and plan for arbitation, and rouse a popular demand for disarmament.

He would ask if the men of Christendom are ever to live as jealous banditti, with one hand grasping the sword, the knife or the gun, to the neglect of every righteous duty—and the toilers of Christendom are ever to be robbed of all that would enable them to escape poverty and beggary, aye, and even of the amount that would save them from dying of famine. Is Moloch or Christ the leader of European civilization? Assuredly it is Moloch if we judge by the relative amounts of wealth, time and labor given to homicide and to benevolence, and from the smouldering fires of national hate at the present time (May, 1881), when the gun-works of Krupp* are running day and night

* By the latest statements it appears that 13,000 men are at work in the cannon manufacture of Krupp.

to keep up with the demand for additional artillery in nations already loaded down with arms.

Major East estimated the entire military force of France at 2,473,866 trained men, including the active and territorial armies and their reserves. Under the present law, every Frenchman between 20 and 40 years is subject to personal military service, no substitute being allowed. Every Frenchman capable of military service is bound to serve five years in the regular army, four years in its reserve, and six years in the reserve of the territorial army. Nearly three hundred thousand young men are drawn in each year by allotment, and

The active army comprised	719,366
The active army reserve	520,982
The territorial army	594,736
The territorial army reserve	638,782
The navy contains	35,108

Thus is the entire population of France, excepting only clergymen, women and those physically disqualified, converted into a military camp, in which fifteen years of training are expected to make a perfect soldier. Two and a half millions of men trained to glory in homicide are a terrible spectacle, and a menace to the peace of the world. They find their ideal in Napoleon, and no word from their religious teachers, nothing in their literature, nothing even in the instructions of the home circle, counteracts the terrible spirit of brigandage thus fostered. All is polluted—the whole atmosphere of society is false, and pervaded by admiration for the sword. Living thus in an all-pervading moral malaria, which, like physical malaria, brings on its regular paroxysmal fevers (checked but never cured by military blood-letting), there is perhaps no salvation for Europeans but by the sanitary wisdom which takes the patient out of that malaria and permits his restoration by a healthy atmosphere. In the peaceful atmosphere of the United States the turbulent populations of Europe may approximate moral health, and gradually lose the fiery passions that would regulate all things by violence or by despotic laws.

But until the moral malaria from standing armies is destroyed by their suppression, there is no hope for the high moral elevation of Europe.

The life of the soldier is a Satanic life, because its idol is homicidal force. It is void of all ennobling influences but firmness, obedience and the sense of honor enforced by flogging,* blows and death penalties, and, like all lives from which love is excluded, it is dreary, monotonous, morbid, and brief. Soldiers, like professional athletes and celibates, are short-lived. The nation that surrenders to the spirit of physical force and avarice is withheld from any high destiny. Its population becomes stationary, while nations that know more of love increase and fill the earth.

The church which has had heretofore the training of the men who become soldiers has done far more to intensify their military ferocity than to inculcate true and peaceful religion. The extent to which they are controlled by the wildest and most inflammable passions has often been demonstrated. According to our minister, Mr. Washburne, "the state of the populace in Paris on the day when it was circulated that the French minister had been insulted by the German emperor was very marked. All the cafés and places of amusement were filled, and Paris was literally rampant for war. The German residents were terror-stricken." "When the dire intelligence of Sedan reached them, their rage and disappointment knew no bounds." "The history of France during the Franco-German war, and that of Paris during the Commune, might be styled an avalanche of pride and savage despotism. Never perhaps in ancient or modern times had such a city fallen into such a dreadful abyss of brute force and violence"—which culminated in a war costing $2,500,000,000 and 185,370 lives.

This eruption of violence was but the display of a chronic condition—the condition that exists to-day

* An English member of Parliament, Sir H. D. Wolfe, told his constituents in a speech that in Russia, Germany and Austria he had nearly every day seen soldiers struck in the face by officers.

after seventeen centuries of so-called Christianity and education. Wherein is it superior to the moral conditions of Rome and Greece? The military leader of Germany, Von Moltke, has asserted recently that "eternal peace is a dream"—that "war is an institution of *Divine origin.* A long peace is dangerous and *demoralizing to any nation.*" To deify war and hate—to pronounce peace and love demoralizing—is moral insanity. War is the embodiment of all that is hellish in the possibilities of humanity, not only in the cruelties of the battle-field witnessed with callousness and inflicted with joy, but in its utter lawlessness, continually surging on to general rapine and devastation, and in the degradation of the soldier to greater sufferings, severer punishments and more complete neglect and isolation than was ever realized in negro slavery. And after all, when armies are even disbanded, there remains the legacy of degraded principles, fierce passions, and mighty debts that crush the laborer with hopeless toil.

All legislation looking to war is deadly, and I may say even criminal, for it stimulates counter-arming by jealousy and hate. Frenchmen speak of revenge, and Germany looks with continual apprehension towards France, Russia and Italy, and prepares with an equal mobilization of her people and devotion of her wealth to war. The spirit of war fills every government as well as the people, and the suggestions of disarmament which have been made by Louis Napoleon, Bismarck and Gortchakoff, have never been seriously entertained by the politicians or seriously thought of by the church. Murderous force is the only God in which Europe trusts. "It is too obvious," said the London *Times* recently, "that the instruments are ready to hand and are being daily sharpened for a possible war, more tremendous, at least in its immediate convulsions, than any yet waged among civilized nations. The systematic increase of the armaments of the chief continental States is as menacing to the peace of Europe as it is injurious to the domestic interests of these countries themselves. But at the same time it must be acknowl-

edged that *no one of the great powers could at the present moment forego with safety strenuous military preparations.*" In other words, to live among the *Christian nations* with a moderate armament is as dangerous as to travel among the mountain brigands of Italy without a load of side-arms and a ready-cocked revolver.

It is a sad illustration of the character of Christendom that we Americans are indebted for our high civilization and liberty to the fact that a portion of the blood-thirsty nations of Europe was isolated from the remainder by a channel of the sea, and thus protected were enabled to make some progress in the art of government and the industries of peace, instead of being overrun, devastated, impoverished and enslaved by their robber neighbors. But, alas, the entire breadth of the Atlantic Ocean was not sufficient to protect the peaceful and happy population of Mexico and South America from Spanish brigandage under the official sanction of the Papal church.

The public sentiment of Europe is brutalized by ages of war, and when deprived of homicidal pleasure it riots in the luxury of hunting wild animals in costly parks, as in America the same impulse indulges in the wanton slaughter of buffaloes for the mere pleasure of shooting. In Spain it glories in bull-fights, in England in prize-fights, and on the continent in duels. What hope is there for mankind while these vast armaments are maintained? Germany, according to Zimmerman's history, had under arms in August, 1870, 1,183,389 men and 250,373 horses. Recently Germany has prepared a movable force of 779 battalions (and cavalry in addition) which in ten or eleven days could be hurled against any frontier.

In 1881 there will be in the

German field army	771,749
reserve	341,480
landwehr	293,020
garrisons	125,834
Ersatz reserve	340,000
	1,872,083

The military preparations of Germany, Russia and France are nearly equal to-day, but are compared with jealous vigilance. A French officer who has resided at Berlin has estimated the entire available military power of Germany at more than three millions of men, and the *Avenir Militaire* says, after a careful examination, that France must make additions to its military force to equal the Germans in numerical strength in 1881.

On the other hand, a Prussian officer of rank, whose sentiments are endorsed by the official press, says that Germany had not a man to spare in her late contest with France, and that the active army of France on a peace footing is stronger than the German in everything but cavalry, and the reserve territorial army is as numerous and efficient as the German *Landwehr*. Hence he maintained the active army must be increased, the *Landwehr* prepared for war, and the *Landsturm* developed to the position of the *Landwehr*, for Germany must prepare with the aid of Austria to encounter France, Russia, and Italy.

Russian official reports in January, 1856, the time of the Crimean war, claimed a force of 2,257,454 men, and in 1879, 1,820,169—numbers no doubt greatly exaggerated. England's half million consisted of the army 336,755, and volunteers 244,263=581,018.

Europe has probably nine or ten millions of men enrolled and liable to be called on for military duty. Col. Barnaby says 9,500,000 soldiers and 250,000 of naval forces. Professor H. Von Holst estimates the *standing armies* of continental Europe as more than one per cent of the entire population, which would be fully six per cent of the efficient males. Recent statistics show that in France during the last eight years there were 1,154,796 men who had passed through the ranks of the active French army whose average term of service was about three years. The fierce temper generated by *such an education* as this was shown in the recent rioting between the French and Italians at Marseilles, caused solely by the Italian jealousy of the French invasion of Tunis and the reciprocal irritation

of the French population. Meantime the immense Krupp gun-works in Germany are kept in constant activity to increase the power of destruction—new buildings are put up, the army of employés increased, and the work driven day and night.

Can there be a more savage conception of society than is thus revealed? Great nations fitted to help each other in a thousand ways in their industrial prosperity and intellectual progress, without a single cause of quarrel or any serious conflict of interest, professing in their governmental institutions, laws, and systems of education to be governed by the ethics of Jesus Christ, and yet each firmly convinced that the others look on with the glaring eyes of hungry wolves that surround a traveller, and only delay their attack while they fear his power.

Is not all this the direct result of the education or lack of education among civilized races, an education pervaded by the sentiment of military glory, a science, philosophy and social order all antagonistic to the religion of love, and a ruling power *which prefers war to education?* A few years since a French statistician, M. Manier, estimated the relative amounts appropriated to war and to education as follows:

	For War.	For Education
France	$59 00	$2 20
Prussia	55 20	2 80
Russia	54 00	3 80
Bavaria	43 80	4 40
Wurtemberg	43 60	9 60
Saxony	42 80	7 80
Grand Duchy of Baden	36 40	6 60

Everywhere we find the insane, pessimistic idea that a nation's dignity and safety depend solely upon her being able to overawe or conquer her neighbor. A position of inferior military power is considered almost equivalent to national destruction. A pamphlet on France and Prussia, recently published in Paris, says: "Of all the dangers that threaten France, her *annihilation* in Europe is the most important," that is, the loss of her military prestige. This was the melancholy

idea that pervaded the writings of M. Paradol, the French Minister at Washington—the gloomy anticipation of what he considered the ruin of France, the decline of her military importance in Europe—a strange hallucination of pessimism, the psychic origin of which was displayed when his melancholy drove him to suicide. War and pessimism are natural associates, and the increase of military power and oppression will fill Europe with pessimistic philosophy and intensify her religious materialism.

The only gleam of hope on the dark horizon of Europe is to the westward. As a tribe smothering in a mephitic cave may look to its western outlet, so may the populations of Europe, borne to the earth by debt, poverty and tyranny, look to free America. Nature refuses to proceed under the gloomy conditions of European life which illustrate the principle, the farther from God and divine law the nearer to destruction. It takes a hundred years to duplicate a population under the debasing conditions of European life, while the duplication occurs in twenty-six years in the United States, and thus we may anticipate a population of 800,000,000 in the United States before Europe shall have attained 600,000,000.

Our own American experience of war, calamitous as it has been, has not impressed our statesmen with the paramount importance of peace. The Federal expenditure for war from 1861 to 1879 was $6,187,243,385, and Mr. Stevens as historian of the Confederate States says that it cost that section $11,000,000,000. The poverty and distress in the South, and the heavy taxation, pauperism, tramps, bankruptcies and paralysis at the North, should have made a deeper impression than they have. But, alas, the warlike spirit is in our people, and without moral education we must expect future convulsions—in fact we have already narrowly escaped a cruel war, and although we are in a commanding position to introduce an era of peace, American statesmanship has not embraced the thought, and the American pulpit is more reliable for fanning the flames of civil

or foreign war than for promoting peace. Where, alas, where is a controlling statesman in Europe who can rise above the gladiatorial spirit, who can regret a past war or provide anything against future wars but gunpowder and conscription. Where can we find any national regret for the military crimes of nations or any reluctance to repeat them? It was Garibaldi who spoke for peace when jealousies arose between Italy and France on account of the campaign in Tunis, and in speaking of a Franco-Italian war he said in his letter, "I think our corpses will have to be trampled on before that monstrosity is realized." "An Italian a French citizen in France, a Frenchman an Italian citizen in Italy, such is the goal we should reach. No more barriers, no more frontiers, complete equality—a fraternity which may serve as a basis for human fraternity."

Victor Hugo is in sympathy with the martial impulses of the French people, and it is in vain that we look for any trace of a national conscience in discussions of war questions. France threatens, Germany arms, and all Europe acts as if expecting to be engaged in a struggle for life *—the ever-impending

* The spirit that keeps up military armaments is well illustrated in the following newspaper statement: "The Berlin *Post*, which is a sober conservative newspaper, and may be safely taken to express the opinion of most Germans on the subject, writes as follows: 'Freely translated, M. Gambetta said, "We are arming to the teeth, not to fight when we are armed, but to bide our time; and our time will come when we are strong and the enemy weak or hampered. As far as we are concerned, to bring about this time is our affair; and as for the enemy, the affair of eternal justice for which we are at present waiting." Now, that is all very good. We Germans, however, would reply, It is our affair to take care that we are never weak, never hampered by our own imprudence, and if we acted like the French in their unceasing zeal to be strong we should probably one day arrive at the conviction that we should both do best to put away our weapons. We Germans would readily do so. A bright idea lately occurred to the French that they could squeeze out of us the last farthing by the burden of the armaments they imposed on us, while their riches would comfortably enable them to support theirs. But in this calculation there is a serious error. A colossal army which does not fight, but merely compels the enemy to be armed, is intolerable.'"

explosion of national jealousy, the costliest of all delusions, the source of debts that enslave the millions.

The Franco-German war was a vast destruction of life and property—to France, according to M. Villefort, a direct cost of $2,943,000,000 besides the losses to private individuals and the interruption of business. Who can compute the losses in personal suffering? 723,602 Frenchmen were taken prisoners, and victorious Germany had 290,000 in field hospitals and 812,021 in reserve hospitals. $800,000,000 per annum, according to the Frankfurt *Zeitung*, is the estimated cost to Europe of its miltary establishments.

This is amply sufficient, if there were no other educational fund, to place the three hundred and sixteen millions of Europeans beyond the reach of war, crime, famine, pestilence and poverty by a thorough moral and industrial education. By keeping fifty millions of the young continually under tuition, a thorough physiological, hygienic, industrial, moral and intellectual education—a liberal education in the noblest sense of that expression—could be given to the entire people which would insure their spontaneous intellectual progress through life, insure their industrial prosperity and rapid progress in the arts, inventions and agriculture, thus abolishing poverty, and soon exterminate crime and intemperance, abolish war forever, and remove every hindrance to a religious condition of society which, when established in any one great country, would by its fervent zeal and moral power overrun the globe.

This is not an idle dream or hope. Its consummation will approach whenever moral education shall be understood and appreciated by the authorities or by the teachers of any nation.

If this small volume could reach the intelligence and the conscience of our legislators and teachers, America might lead the world under the white banner of eternal peace and unvarying prosperity. If it can be acted on by the enlightened rulers of that most progressive and most amiable of nations, the Japanese, they may snatch from our sturdy grasp the banner of leadership,

and by superior ethical merit become the representatives of the highest civilization, for which they are so well qualified by their high-toned sense of honor and unselfish virtues.

But the horrors of war are not fully expressed by standing armies, their cost and their crimes. The debts entailed by war are like a cancer upon the body of society, and surpass in their costliness the military budget. A thousand millions of dollars would not pay the annual interest on European war debts at five per cent.

The entire debts of European States (which are due to wars) have risen in former years (from 1865 to 1879) from £2,626,000,000 to £4,324,000,000 (and have nearly doubled since 1848). The annual cost of government has therefore been nearly doubled by war debts and armies. Germany has increased from £31,000,000 to £66,000,000; Russia from £51,000,000 to £107,000,000, and France has reached £119,000,000. Eight hundred millions of dollars are now the annual cost of European armies, Russia alone expending $180,000,000. This annual cost of war in times of peace is surpassed by its permanent burden from the past, and as every war adds to the mass of unpaid debts, while every armament stimulates counter-armament and demands more soldiers, guns, and ships, what ease or hope can ever come to the fevered constitution of European society?

Italy is continually meditating upon war instead of attending to her wretched laborers* and beggars. In the midst of her most beautiful and fertile regions in

* "It has often been observed that Italians will undertake the most noisome labor, and that they live more frugally than any other class in the community. But to thousands of them the hardest life here must be luxury to what they have known at home. The Pavian *Reporter* tells us that in the richest districts may be seen a population morally reduced to the level of brutes and physically ruined by the inhuman severity of its labor, infamous food and shameful lodging. The proprietors and their agents appear to be utterly indifferent to the condition of the laborers."—*N. Y. Times*, May 12, 1881.

Lombardy from five to eight per cent of the population are slowly dying from pellagra, which is simply the result of an insufficiency of wholesome food. At the lowest estimate there are more than 100,000 victims at present. It would be more humane to send them forth at once as "food for gunpowder," for then they might have wholesome rations and a less hideous death. From the midst of this starving population, with wages from ten to twenty cents a day,* the government takes fifteen millions of dollars to build four monster iron-clads, the Duilio, Dandola, Italia and Lepanto, with iron armor TWENTY-TWO INCHES THICK, and as fast as monster cannon are constructed to shatter two or three feet thickness of iron, the defensive armor is increased. Millions are sunk in this insane rivalry, while every French or German regiment recruited brings forth new regiments, cannon and forts across the national boundary, and no increase of poverty or famine in the robbed peasantry suggests any mercy or any moderation in this race of death and ruin. Centuries of war have obliterated the sentiments of national philanthropy, and rivalry among nations as among bravos suggests additional weapons. The King of Spain, in speaking to the Cortes, blind to the need of education and industry to uplift a ruined nation, suggests military and naval armament to enable Spain to reconquer her position among nations! India, with her terrible periodical famines, sweeping off in Madras alone 500,000 in five months of 1877, and in some of the northern provinces "more than half the population" (according to Mr. Hunter, the Director General of Statistics for the Government of India), and with her ever-present poverty, can expend half a million daily in a military campaign, and eighty or ninety millions of dollars annually on her standing army. Citizens die of starvation that soldiers may be fed to sustain a government generally detested, by which, the Poona Mahratta newspaper says, "in one of

* At a hemp manufactory at Florence the wages were 15 cents for fourteen hours' work.

the Indian provinces the public generally are treated as if they were something less than dogs." The starvation of the poor to feed soldiers was a matter of indignation when the famine fund raised by a tax burdensome on the poor was shamefully diverted to meet the expenses of the Afghan war.

Statesmanship infected by this prevailing hardheartedness has not yet seriously considered the gloomy present and gloomier future. D'Israeli, Louis Napoleon, Bismarck and Gortchakoff have been merely leaders in national bravado and bloody rivalry, and the conscience of their nations does not repudiate their bloody leadership, with which an apostate Christianity is thoroughly identified. The peace which put an honorable end to the cruel and criminal invasion of the Transvaal Republic in South Africa by England was bitterly denounced by a powerful party in England through Lord Salisbury and Lord Cairns in the House of Lords as a "burning shame," and even the surrender of Lord Cornwallis to Washington was referred to as something deeply regretted, which darkened the annals of England.

There is little hope for Europe except that the keen suffering of the laborers may in time rouse them to the consciousness that they are enslaved and plundered, and that war is their greatest enemy.* The statesman who could lead them in a movement for peace would be the Moses of civilization, the greatest philanthropist of history.

Possibly some one may arise in England and bring to bear upon the national conscience the potent argument of personal danger. The indisputable fact that Great Britain is no longer a formidable military power or even ruler of the seas—that within one month or at least two months England could be overrun by a French or German army, since they surpass her in

* There is some popular aversion to the army developed in Germany, for although the pay of a sub-lieutenant is two or three times as great as that of a professor or a parson, it is found difficult to supply the army with officers.

military development as five to one—should teach the British government that safety for their nation is to be found only in peace and arbitration.

But whence can we derive our hopes under present systems of education, government, and religion, when education, government, and religion are saturated with the demonism of war? Bismarck professes religious sentiments, and the German army is the most highly educated body of men ever arrayed for the work of death, and not only intellectually educated, but subjected to a considerable amount of moral supervision and training, but it is not a religious body, and if it were pervaded by the state religion of Europe, it would be none the less homicidal in its tendencies. There must be a true religion, the religion of Jesus Christ, instilled by moral education, before the homicidal spirit can be quelled. There can be no true civilization while the leaders of mankind are actuated by the sentiments expressed by Von Moltke to Prof. Bluntschli: "War is an element in the order of the world *ordained by God.* In it the noblest virtues of mankind are developed—courage and the abnegation of self, faithfulness to duty, and the spirit of sacrifice; the soldier gives his life. Without war the world would stagnate and lose itself in materialism"!!

This is indeed the strongest argument that can be offered in favor of war, but it applies with nearly equal force to the life of the brigand whom society everywhere condemns to the gibbet. The robber and the pirate may be brave, graceful, accomplished, faithful to comrades, and even generous, but they are a curse to society, and so is the army which lives by robbing industry of its earnings and which compels neighboring nations to arm and watch at vast expense, as householders, unprotected by law, must arm and watch against roaming burglars.

National brigandage must in time be repressed by international law whenever divine love shall be sufficiently developed in humanity to cross the national boundaries and establish international fraternity.

The horrible incongruity with the professed Chris-

tian religion of all this vast apparatus of homicide is not generally realized either in the church, the college, or in the halls of legislation, nor even in the most refined circles of female society, where the tenderest sentiments are felt. Woman has so entirely been excluded from the sphere of political power and from even the knowledge of governmental matters, that she looks upon the wars and military establishments, in which her own children are to shed their blood, much as our ancestors looked upon the progress of a pestilence which they ascribed to the divine wrath and considered entirely beyond their own control. Peace will perhaps be insured when woman shall be educated up to the high responsibility of her position and shall demand and receive her share in government.

It would even seem that war is regarded as an essentially Christian institution, since British soldiers are reported as generally *belonging to the church.* Of 184,067 soldiers constituting the army, 114,031 are officially reported as belonging to the Church of England, 39,743 as Roman Catholics, and 7462 as belonging to Protestant denominations.

The chaplains are a portion of the equipment of all armies, and however profligate, villanous or murderous a war may be, the church lends its sanction through its chaplains. The wretched Hessian mercenaries hired to assist in enslaving the American colonies were accompanied by their chaplains. One of these Hessian chaplains said in a letter from Brooklyn, dated September 7, 1776: "Our dear Hessians learned to bear the hardships of the sea, and *I endeavored in my prayers and sermons to strengthen them in their Christian heroism.*"

Identified as chaplains are with the cause for which they pray, and to which their zealous efforts lend the same support as the fifer and drummer, it is not strange that they sometimes take part in the actual fighting.

When I realize all these horrors, the embattled hosts of brutalized men, the toil and degrading poverty of the millions who sustain the blood-draining

power, the continual preparation for homicide as if it were the chief end of national existence, the demoralizing power of the passions thus nursed, the self-perpetuating power of this infernal fire in human souls, and the agonies of battle-fields covered with mangled, groaning, dying men for whom despairing wives, mothers, and children are mourning, I realize the heroic impulse of the brave monk Almachius, who rushed into the gladiatorial arena at Rome to arrest the progress of the brutal scene, and gladly would I throw away my remnant of life to-day if it would be the means of arresting a single war.

To that sentiment all men should be brought up—to a heroic determination that *war shall cease*, and that no two nations shall be allowed to engage in the hellish crimes and degradation of war. A single great nation bravely bent on the establishment of peace throughout the world could effect it. Whenever moral education shall have reared one generation in the United States, there will be a power competent to establish universal peace.

As a first step to the reign of true religion, peace on earth and good-will among men, the glory and glamour of war should be abolished, not only by more truthful histories in which its infamies and horrors should be unveiled, but by taking off its tinsel and glitter, which are so delusive. The abolition of the drum in France and the proposed abolition of military standards are good movements. Let us abolish all expenditure for distinctive and ornamental uniforms, which are simply a needless expense to glorify war and hide its hideousness. Abolish the plume, the banner, the helmet, the drum and fife, the trumpet, the epaulette, and the useless ornamental sword, and let the parading soldier understand that he is simply drilled to learn to march in mud and dust, to starve, to lie on the ground, to shoot, to be wounded and to die away from home by wounds or disease in the struggle to inflict the same miseries on others, against whom he has no cause of offence—men whom God commanded him to love.

Let him carry his knapsack and march all day regardless of weather to realize what a campaign is, carrying his hard crackers and dry beef, and lying on the ground at least one night before he returns to comfortable life. It was a capital illustration of the utter heartlessness of everything military, which the deluded recruit overlooks, when the First Brigade of the First Division of the New York National Guard lost as many men as in a moderate battle by a parade on the 12th of May, 1881, which common humanity ought to have forbidden if common humanity has anything to do with military parades. It was the more inhuman and unpardonable as a previous experience had given warning when on a Fourth of July parade on Eighth and Fifth avenues seven men were killed and a score permanently injured. At the Prospect Park parade-ground in May, "over seventy-five men were prostrated by the heat, and there were fourteen genuine cases of sun-stroke. The thermometer was at 95°, and the men fell so rapidly that common sense and common humanity came to the rescue, and the disgraceful scene was ended by a dismissal.

We have seen in this brief study of the innate power and educability of humanity, as demonstrated by anthropology and by extensive experience in colleges, kindergartens, reformatories and State prisons, that the abolition of crime in young criminals and the abolition of vices and evil passions in the young generally are within the power of moral education. It will be easy to abolish that national jealousy between the French and Germans, the Germans and Russians, which makes war an imminent danger. The education together of the leading youth of each nation in schools like that of Fellenberg would make war impossible if all the appliances of moral education were used.

The establishment of moral education for thirty years would totally change the character of any nation, rendering the irascible French and Irish, the domineering English and the haughty Spanish alike reasonable and emulous to excel each other in international courtesy and hospitality.

It is as much the false education as the evil passion of man that renders war a possibility now, as human sacrifices were possible when superstition demanded them. The vast armies of the American civil war quietly disbanded and resumed the pursuits of peace. Old soldiers are surrounded by women and children, to whom they are affectionate protectors. The veterans of opposing armies, Federal and Confederate, French and British, settle together in terms of amity like the most peaceable citizens. Yet the very men who in times of peace look with horror upon riot and murder lose their humanity when enlisted for war, and no longer consider homicide and arson crimes, for such is their education. But the demonism which has been introduced by an education deriving its primal impulse from barbarous ages, can be easily exorcised by moral education. Opposing armies that might listen under a flag of truce to a true religious teacher might mingle in Christian fraternity as cordially as three thousand Confederate prisoners once cheered Gen. Joseph Hooker on hearing from him a few words of respectful kindness. This spring the Knights Templar of Boston and Providence have visited Richmond, Va., and decorated with flowers the statue of Stonewall Jackson, while standing with uncovered heads. A New York regiment has been received with boundless hospitality in New Orleans, and the Confederate soldiers have convened at Chattanooga to give a cordial reception to the Federal veterans, the Society of the Army of the Cumberland, when it meets in September at Chattanooga.

Even the cannibals of Fiji, once reckoned the most ferocious and brutal savages, and some of whom still carry their old cannibal names, as "Blood-drinker," etc., are thoroughly reclaimed in one generation, supporting now 900 Methodist chapels and an ample number of school-houses. There is not an Indian tribe that we might not have made a peaceable and friendly agricultural people with far less expenditure than we have sunk in Indian wars.

Capt. R. H. Pratt, of the United States army, gave

one of the first practical demonstrations of this upon prisoners captured in war from an Indian tribe. Instead of sending them to prison he sent them to school, and in three years so changed their habits and characters as to justify their release, since which they have given no trouble. Upon this experience was based the successful Indian school at Carlisle, Pa., which accommodates about 250 Indian boys and girls.*

The Hampton Normal and Agricultural Institute has about 400 students, over eighty being Indians. It is an admirable example of industrial education and co-education.

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* Secretary Schurz said at a meeting in New York in 1881: "I shall look upon the establishment of the schools at Hampton and Carlisle with great satisfaction. If you should visit those schools you would be astonished to see intelligence dawning in their countenance. They not only learn there to read and write, but they learn to live and to work. A few weeks ago 50 sets of double harness were sent to the army made by the Indian boys at Carlisle. In a short time we will furnish not only harness from Carlisle, but wagons too. Gen. Armstrong and Capt. Pratt must be particularly mentioned for their good work among these children. Let nobody disturb you by saying that when the pupils return to their tribes they will become savages again. That may have been the case when civilization was not in demand among the Indians. But things have wonderfully changed. The old mode of life is felt to be untenable. They know that work will become necessary—that knowledge will be in demand to that end. Even the old fogy chiefs want to see their children educated. An educated Indian is no longer ridiculed, but envied. There is no danger now of his relapsing into a savage life. He will be a teacher and a leader. The system at these schools calls for very large extension. Congress ought to be liberal to educate the Indians. Hampton is not a government institution. Instead of two schools we ought to have fifteen in various parts of the older States. We want particularly to enable Gen. Armstrong to erect a building for the education of Indian girls. Indian women have always been only beasts of burden. No human society can be good where woman is not recognized as an equal. Woman makes the atmosphere and must make the attraction of the human home. If we want the Indians to respect their women, we must teach the women to respect themselves. I commend this object mainly to your consideration. The time will come when we will speak no more of Sioux and Apaches, but of good and orderly American citizens of Indian descent." [Applause.]

It is among the young that education shows its sovereign power, and as great a revolution can be achieved among children in a month as among adults in thirty years. The *New Education* says, speaking of the first institution of kindergartens among neglected children:

"The first few days the kindergarten is like a menagerie of little wild beasts, tearing and pounding each other, talking profane and foul language, rebellious, and selfish—all the vices being displayed in miniature. In a week's time order has dawned, for delightful occupations have chained attention; beautiful sights and sounds, and lovely sentiments set to music, have charmed eye and ear and heart; harmonious and dramatic plays have been organized; kind words and caresses have waked a new sense of enjoyment, and in less than a month it is a little, orderly, docile, and compliant company, in which all are agreeable to each other, forming little friendships and making sacrifices."

"Suffer little children to come unto me," said Jesus; and I repeat, let them come: bring them away from the sphere of ignorance, animalism, selfishness, antagonism and universal war, in which they are now growing up, and lead them through the delightful paths of ethical education to the perfect manhood of love, duty and happiness.

One lesson is most impressively taught by the review of our social conditions—the folly, fatality, and costliness of the evil passions, and the benignant, elevating, wealth-producing power of the Divine principles of Christ, which would put an end to national devastation and remove the military cancer that absorbs the prosperity, the virtue, and the liberty of nations, perpetuating poverty, despotism and crime. Mere moralism tolerates resentment, retaliation, and war; religion forbids these evils.

As an element in political economy, a factor of national wealth, the religion of Christ is worth all the mechanical discoveries and financial wisdom that have ever been introduced, while as an element of education it is worth all else, for with it all the rest, whether intellectual, artistic, or hygienic, attain their maximum development and value, while without it they all fail

in development like the meagre vegetation of a barren soil, and, however developed, are practically worthless. It were better that a man should not be born than that he should be born without the Divine element of love.

The establishment of the Divine religion as the controlling portion of the nature and constitution of man is the function of moral education, and when this shall be comprehended and done, the millennial civilization will begin.

CHAPTER XI.

THE EDUCATIONAL CRISIS.

Prosperity and progress dependent on industrial education and the prosperity of the industrial classes.—Common-school education does not prevent social degeneracy and crime.—Need for a better education.—Criticisms of R. G. White upon New York schools and their demoralizing influence.—Miseducation of American girls.—Schools unfavorable to industry and integrity.—Their intellectual training inefficient.—Industrial education practicable and cheap, as proved by the industrial schools of Paris.—Belgian schools.—Success of the Hampton Institute.—Education among the Choctaws.—Self-support by industrial students.—All industrial improvement sacrificed by war.—Education has failed in intellectual development.—Fostering neither reason nor invention, it leaves mankind creatures of habit and prejudice.—Hostility to higher teachers in religion and philosophy and to unrecognized genius.—Education does not make valuable citizens.—Our educational system not attractive to the lower classes.—Testimony against the moral influences of education.—Benefits of industrial schools.—Attested by Pennsylvania Legislature.—Society degenerating in sphere of education.—Degeneracy shown in England by diminished size of heads.—Great increase of suicide and insanity.—Statistics of the vast number of teachers and the large endowments of colleges and universities.—Great increase of educational expenditures.—Increase of education and increase of misery.—Increase of insanity in European countries, in New York and Massachusetts.—The increase coinciding with education.—Personal degeneracy: half the recruits of European armies unfit for service.—Increased mortality and diminished longevity during the last fifty years.—Mortality by consumption.—Increase of pauperism.—Terrible increase of intemperance in Great Britain, Sweden and the United States.—Corresponding increase of crime.—Five causes of social degeneracy: concentration in cities, military conscription, industrial ignorance, gambling competition, city filth and unwholesome food.—Education remedies none of these evils.—Increase of crime in Britain, Holland, France, Norway and United States.—Illegitimacy and prostitution.—Decline of religion, increase of agnosticism and materialism.—Opinions of philanthropists.—Encouraging indications.

WE have reached a crisis in which the educational battle against social evils has begun; and if we realize

the vast extent of the evils—the rapid progress of social degeneracy, the failure of all educational agencies heretofore employed to elevate society, and the omnipotent power that we may wield in moral and industrial education—there will be no lack of enlightened teachers to consecrate their lives to this work and of philanthropists to furnish the necessary means. Individual action must precede the slow movements of legislative bodies, and the success of schools must be demonstrated before the State will follow the example. Let us therefore, to realize the magnitude of the occasion, review the imperfections and disastrous failures of educational systems, in comparison with the demonstrated success of a truly *liberal education*, which seems the only hope of humanity to avert the shock of war, the horrors of social convulsions to which we are tending, and the pestilential accumulation of the horrors of physical degeneracy—disease, crime, pauperism, suicide, and insanity.

The progress of Europe in civilization and liberty has been due to the rise of the industrial classes from their degraded condition when the sword was the chief factor of national destiny. The wicked spirit of the Roman empire which honored only the soldier, identifying labor with slavery, and made the slave as helpless a victim of cruelty as dumb beasts, has pervaded Europe, and is not yet extinct. National profligacy and brutality are signalized by crushing the *toiler* and the *woman* because they are weaker, and this brutality degrades the nation in proportion as it prevails. The United States bid fair to become the leading nation of the world, because here woman is honored and the laborer has the political power in his own hands; but the laborer cannot sustain himself against the oligarchic tendency of society, which lies in the accumulation of capital and corporate power or monopoly; nor can woman retain her honored position without the *industrial education* which gives independence and social power to the laborer and the woman.

The tendency of the educated civilization of this century is steadily toward the *degradation of labor and*

the degradation of maternity—in other words, the degradation of a majority of the women from whose present condition the race takes its departure. Can anything but the degradation of the majority be expected from a social competitive strife in which a few skilful energetic families control the wealth of the country, and the remainder as competitors for employment or for tenantry are at the mercy of employers and landlords? In this competitive struggle, Ireland, though less populous than continental Europe, was reduced by heavy rent to the verge of general famine in 1879, although after losing about three millions by emigration she had a superabundance of land and productive power.

The degradation of labor implies the degradation of the majority of the women, leaving them fit only to become the mothers of an inferior generation.

Very few have any conception of the great educational crisis which this century has developed. It is commonly supposed that our common school and collegiate systems are fully adequate, and need only extension and liberal support. Millions are given for their extension, but little for their improvement, because their great inadequacy is not understood.

It is supposed that statistics show crime to be chiefly prevalent among the illiterate classes, and that the abolition of illiteracy will reduce crime to a minimum amount. The conclusion of J. P. Wickersham (late superintendent of schools in Pennsylvania) from criminal statistics was that crime in this country was ten times more frequent among the illiterate than among those who had common school or higher education. But this does not prove the protective power of education at present, and a larger view of the facts leads to a different conclusion.

The criminal statistics show merely a coincidence between degradation and illiteracy. But was the illiteracy the cause of the moral degradation, or was the moral degradation the cause of the illiteracy? We have too many examples of virtuous but illiterate rural populations to allow the truth of the former theory, and we know that the socially depraved classes

are generally indifferent to education and are in consequence almost uniformly illiterate. We may compel them by law to submit to common school education, but experience does not justify the belief that the amount of criminality will be greatly diminished, for the records of the Eastern Penitentiary of Pennsylvania during twenty-six years exhibit about four times as many convicts educated to the extent of reading and writing as of those who were entirely illiterate. It requires very little observation to ascertain that vicious, quarrelsome, lying or thievish boys are not usually reformed by common schools.

A different class of statistics is required for the settlement of this question—statistics which exhibit the increased diffusion of education, and the consequent increase or diminution of crime as education is diffused. The statistics of all civilized countries show that education has not yet been able to cope with crime and social degeneracy.

Our large amount of illiteracy (20 to 22 per cent of our voting population) is less discouraging in its tendency to develop crime, than in its tendency to check every species of improvement, to impair the foundations of popular government, and to encourage political corruption and the crimes of demagogues.

That the morals, the propriety, the political soundness and the very preservation of our republic demand a better education is clear to all who investigate the subject; and the trenchant criticisms of Mr. Richard Grant White on our present school system, published in the New York *Times*, though very severe, are worthy of serious consideration. Speaking of the public schools of New York, he says, in the essays from which I make extracts:

"That they exert any wholesome influence upon our society, either morally or intellectually, that they make their pupils better men and women or better citizens, or that they fit them for the duties and the business of their lives, I do not hesitate to deny. The proof of the pudding is in the eating; the proof of the value of our public school system is in the quality of the young men and the young women that it produces. What is their actual worth in practical life? How much better are they morally and intellectually

than young men and young women who have never been to public schools?

"To this question there will be but one answer from those who are qualified to speak upon it, unless my observation and information are both very erroneous, and the answer will be against the usefulness of our public schools in fitting their pupils for the duties and the business of life. Go into any household, the mistress of which has had 20 years' experience of her position, and ask if in any employment she may have to offer, whether requiring skill and intelligence or mere faithful obedience to orders, she would prefer a public-school pupil to one who, although a 'greenhorn,' has been well brought up in a respectable but humble family, and you will be astonished, if you have not been so astonished before, at the quickness and the earnestness of the decision against the product of the public school. The young women who, after a few years of education at the public expense, seek situations, are (with very rare and notable exceptions) entirely unfit for their positions, and not only so, but incapable of being fitted for them by constant instruction given in the kindest manner. They are ignorant, slovenly, heedless, headstrong, self-conceited, disrespectful, and altogether unamenable to the discipline of a well-ordered household. Their 'education' has simply fitted them to read dime novels and cheap newspapers, to covet dress altogether unsuited to their position, and to go to the theatre or on excursions with a 'young man.' Their view of the requirements of their position is that they are to do just so much work as will give them the right to demand the money that will enable them to compass the aforesaid enjoyments, and that they are to do no more. Of notions of duty, of interest in their work, of a desire to learn it thoroughly, of docility, of that respectful bearing which begets respect, they are as innocent as Hottentots or Yahoos. As to their morals, they are generally in every respect somewhat inferior to young women who have had no public school education, and who can hardly read and cannot write. No housekeeper of experience desires to take a public school pupil into her service in any capacity.

"Nor are the boys who come from our public schools much more admirable products of the system. A small number of them are of that human order which is born for intellectual labor, and is impelled to it by a resistless inward force; some, of course many more, are of moderate mental ability, or sober, reserved, and almost timid dispositions, and these profit in a certain degree by their education, although it is doubtful whether the benefit resulting to themselves or to society justifies the means and the expenditure by which it is attained. But as to the large majority of the boys who come from our public schools, ask those who employ them. Ask the master mechanics, whose memory goes back to a time when apprentices came only with the instruction and the training received at home, or in a dame-school. The answer, unless I am much in error, is sure to be that, although the public-school boy may be a little more glib of tongue, and know superficially a little

about geography and history of which his predecessor was ignorant, he is generally inferior in all that makes a good apprentice, a good workman, a thrifty, substantial, respectable man. He is less respectful, less docile, less in earnest about his work, and, on the whole, inferior in principle, in faithfulness, and even in manners, to the boy who had been taught merely to read and to write, to fear God, and to honor his father and his mother.

"Nor do the records of crime justify the general assumption that public schools are a conservative moral force in society. And indeed he must be a heedless observer of human life who regards intelligence or any kind or degree of education as a moral safeguard. Intelligence and education may teach caution, but they do not inspire principle; and not unfrequently natural gifts of mind and acquired knowledge are made merely the effective engines and promoters of crime. It would be interesting to know what proportion of our native criminals have been pupils of our public schools. I have not accumulated any statistics upon this subject; but judging by my observation, I venture to say that the proportion is very large, so large that if it were authentically ascertained the publication of it would produce a profound and painful sensation.

"It is to be remarked, before the further examination of our subject, that, beyond question, there is a very considerable number of the pupils, in both sexes, of our public schools who do profit by their instruction there, and who do become good citizens, estimable men and women, and efficient workers in various departments of the business of the world. But these, it will be found, are, with comparatively few exceptions, young persons who, if our public school system did not exist, would receive in other ways all instruction necessary to fit them for their positions in life.

"A very young woman came here from Ireland, and soon obtained a place as a nurse in a family where I first saw her. Her mistress, who was a woman of unusual intelligence and social culture, trusted her entirely, and well she might do so, for the girl was intelligent and faithful, well-mannered, pleasant in her person, and as neat as a pink about herself and the little ones in her charge. She had learned all that she knew at a nuns' school near Dublin. She could read and write quite well enough for all her own purposes, as well as for those of her employer, and she was a quick and expert needle-woman, and was capable of making not only her own clothes, but, under the direction of her mistress, anything that a child would require. She took an interest in her work, had a pride in the children in her care, and performed her duties in no perfunctory way, but with heartiness and zeal. She was treated with the respect and regard which such service merited until she left domestic service for married life. She had five children, two boys and three girls, who are now between 12 and 20 years of age. They all were sent to public school at an early age, and continued their attendance for some years. Without an exception they are utterly worthless creatures, morally, mentally, and, almost, physically. What they learned at school would be of little or no use

to them in any position in life, so imperfectly was it acquired and so unready are they in its use. And this is because of no dulness on their part, for they are sharp enough, and quicker-witted, perhaps, than their mother, but they are shallow, unstable, and purposeless—that is, purposeless for any good. For they have one purpose to which they adhere with notable tenacity, and that is to get as much money and pleasure as they can, and to do no work if they can possibly avoid it. Ill-health has diminished the father's means and weakened his authority, and to help their mother the boys will do nothing. In spite of all that she can do, they spend their time in 'loafing' by day and going to such entertainments as are accessible to them by night. They have, indeed, one other notable occupation for which, at least, the public school has fitted them. They spend much time in reading what are known as dime novels and weekly papers of a like sort, such as may be found, with illustrations, on most of the news-stands. The eldest positively refuses to do any work or to learn any trade, but has announced his willingness to accept an appointment on the police force, and meantime waits upon Providence. The girls are worthy of their brothers. They are flimsy, hysterical creatures, lacking every good quality of mind, heart and person which made their mother respected and liked. They can neither read nor write well, nor can they sew. Their idea of happiness seems to be a whirl of excitement. Of duty they seem to have no notion. Of a desire to learn to do anything serviceable, and to do it well, with a pride in their work, they are as void as if they were she Chimpanzees. Yet their needs are twice those of their mother. She dressed always neatly, always becomingly and prettily. They are slovenly, vulgar, and tawdry, and yet the cost of her clothes for a year would not dress one of them for a month. She works hard, but they are idle. For their mother's sake they have been placed in good situations, but in vain. No one 'could do anything with them.' Deference, respect for authority, subordination, seem entirely foreign to their natures. Their only desire seems to be for what they call 'fun,' and for freedom from all restraint, even that of decency. Their mother having been taught by the nuns only to read and to write and to sew and to do right and to respect herself and others, made an efficient, respectable, lovable woman; they, the whole five of them, all public-school scholars, are utterly worthless creatures.

"Another case is like unto this. It is that of a young woman, of perhaps not so fine and delicate a nature as the others, but still a good, sensible girl, respected and liked by all who knew her. She could read but very little, and with difficulty, and could not write; but she could sew. She was, however, so faithful, so efficient, so pleasant in her ways, and so thoroughly respectable, that she was always able to live in comfort, and she was happy until her children, of which she had three, began to enter their 'teens.' They all went to public school, and they all have gone to ruin. The boy will do nothing. He will even sit still and not stretch out his fin-

ger to help as he sees his mother toil past him with the water with which she washes his shirts. He is not twenty years old, this public-school pupil, and he has already been in prison. What need to say what the daughters are? They rival their brother, in so far as their sex permits them to do so. And these children have not even the health and strength of their parents. Their mother was a fine, healthy, handsome woman. They are flimsy bundles of nervous tissue.

"In both these cases the families were Roman Catholics; but in that of a Protestant family known to me the circumstances were in all other respects the same, and the issue was the same. The stay of the family was a girl who, although she was born here, had had only enough of public school to enable her to read a little, which was chiefly in her Bible, and to write her name with great difficulty. She was put to hard work when she was twelve years old, but she, after giving for ten years nearly every dollar that she earned to her father, is now almost beloved by the estimable lady with whom she lives, who trusts her as Joseph was trusted in the house of Potiphar. She would be happy if it were not for her family. Her brother, who has been for years a public-school pupil, is a miserable young good-for-naught. He will do nothing; he respects nothing; he knows nothing worth the knowing. It is the same sad story.

"Now, are these children made what they are by the public school? Yes, in a certain sense they are. Of course, it need not be said that the mere learning of anything that is taught in public schools could not have a bad effect. Nothing is taught in those schools which is in itself demoralizing. It is the lack of what is not obtained at public schools of what cannot be obtained there under our present system—discipline, mental, moral, and physical—that is one great cause, if not the chief cause, of such deterioration as that of which I have given examples. There is no falser, no more injurious notion of education than that it consists merely in the imparting of the knowledge of certain facts. Conducted as our public schools are now, they are merely great force-pumps to force knowledge of facts into the minds of boys and girls who do not retain the knowledge, and to whom it would be of little service, generally of none, if it were retained. Of discipline for the life before them, of training for any life possible to them, they get none. If our public-school system had anything at all of the formative social power which is commonly attributed to it, that power would be shown in just such cases as those which I have brought forward. It was for just such cases that it was designed; it is in just such cases that its power is vaunted. Of the pupils who now fill our public schools, a very large number are not in need of the elevating moral and intellectual influences which are the boast of the system.

"There remains the point that our public-school system fits the people for an intelligent discharge of the political functions or duties peculiar to a democracy. Does any man of sense believe this?

Could any man who can render a reason believe it in the face of the history of the country during the last half century? If our public-school system can do anything for the benefit of our politics, it must certainly and primarily be in the fitting of its pupils to choose good men for the making and the administration of our laws. But the facts of the case are so flagrantly, so notoriously to the contrary, that it is needless to set them forth. It is not necessary for us to go back to the times of our fathers, or even for the mature man to become, as Horace says, a praiser of the doings of the times when he was a boy. We have, all of us who have reached the fulness of manhood, seen the steady deterioration of the public service—a deterioration equally remarkable in the capabilities, in the morals, and in the manners of those who are called into it either by appointment or by election, but most particularly by election, which should be, and which indeed is, the most trustworthy test of the political value of our public-school system. We all remember Tweed, and the flock of unclean birds of prey of which he was only the uncleanest and the most ravenous. To say anything of the criminality of these creatures is now unnecessary; but they were not only criminal, they were sordid, vile, and vulgar. They were men who, in their tone of mind and in their habits and manners, were loathsome to all decent people. They had the gift of making vice more hideous than it is intrinsically. They were no pretended philanthropists professing universal benevolence, no brilliant demagogues setting themselves up as the high-priests of freedom, no successful soldiers dazzling the popular eye with military glory; they were not even decent, well-mannered, well-educated gentlemen, which some rogues have been. They sought their sordid ends openly (among themselves and their supporters) by the most sordid and vulgar means. And yet we have seen miles of the streets of New York filled with a procession in which was borne at short intervals transparencies with the portrait of this vulgar villain, and the legend 'The man we delight to honor.' And yet we narrowly escaped seeing a bronze statue erected to such a man, who was base in all the ways of baseness. Now, the worst of Tweedism (which is not confined to the city of New York, but pervades the State, and, indeed, more or less all the States except two or three in New England and at the South) was not Tweed himself, but the condition of society which made Tweed possible. That such people as he and those of whom he was the chief should come to the top in our municipal politics, and that men whom he and his like could use should make our State laws and administer them, is the greatest reproach that could be brought against the moral and political condition of the country. Worse could never have been said of any country; anything so bad cannot now be said of any country in civilized Christendom. Now, the significant fact in relation to our subject is that this condition of our society, and particularly this condition in respect to politics, has been developed *pari passu* with the development of our public-school system, and that it still exists. This, indeed, does not prove that the condition

in question is the consequence of the public-school system; but it does prove unanswerably that that system is absolutely powerless to prevent or to correct such a condition of society."

Gail Hamilton also speaks as severely as Mr. White in reference to the education of girls:

"In connection with our public schools there is springing up a school of ungracefulness and indelicacy, which, to my thinking, goes far to neutralize the good wrought by the former. Groups of girls travel daily from the country villages three, five, ten miles over the steam and horse railroads, to normal and high schools of the city, and return at night. What is cause and what is effect I do not know; but these girls sometimes conduct themselves so rudely as to force upon one the conviction that it would be better for women not to know the alphabet, if they must take on so much roughness along with it. Typical American girls, pretty, gentle-faced, intelligent looking, well dressed, will fill a car with idle, vulgar, boisterous clatter. Out of rosy, delicate lips come the voices —of draymen, I was about to say, but that is not true; for the voices of these girls are like nothing in the heavens above or the earth beneath. The only quality of womanliness they possess is weakness. Without depth, richness or force, they are thin, harsh, inevitable. They do not so much fill the space as they penetrate it. Three or four such girls will gather face to face, and from beginning to end of their journey pour forth a ceaseless torrent of giddy gabble utterly regardless of any other presence than their own. They will talk of their teachers and schoolmates by name, of their parties and plans, of their studies, their dresses, their most personal and private matters, with an extravagance, with an incoherency, with an inelegance and coarseness of phraseology which is disgraceful alike to their schools and to their homes. They will compel without scruple and bear without flinching the eyes of a whole carriage load of passengers. Indeed, the notice of strangers seems sometimes to be the inspiration of their noisy, unmelodious clatter."

A New York mother approves Mr. White's criticisms, and says:

"The children of illiterate parents, who can give them no assistance at home in acquiring their lessons, are not thoroughly taught the only branches of knowledge which can enable them to raise themselves above the conditions of hard manual labor; and the children of educated parents catch, as children will, when the opportunity offers, a thousand corrupt words of expression, a rudeness of manner which it takes a life-time to shake off, and with which they gain a very superficial knowledge of the 'higher branches' of a common English course of instruction. I know of six children of twelve to fourteen years of age who have been six

to seven years at public school. They cannot read the simplest sentence well, nor a page without constant stumbling and mistakes. They cannot direct or write a letter with anything like neatness or correctness, nor set down properly and add up with dispatch a column of figures. Of these six children two are girls. They cannot sew nor cut out the plainest garment. None of them have the health or the strength of their fathers and mothers. What are they fitted to do?"

A correspondent of Mr. White reinforces his views as follows:

"As to college education, is it not admitted that those who profit by it most are those who earn the funds to pay for it, and that those who learn little save vice and worthlessness are commonly those whose education is paid for by others? The business men of Philadelphia say that the fruit of the free instruction of Girard College is to crowd the town with learned drones, boys whose acquirements have made them too proud to follow trades, yet have not the capacity to do work which needs more intelligence, or for whose services in such directions there is no need. A false social standard is at the bottom of the difficulty to which you allude to-day. The strongest teacher is experience; and experience soon teaches the growing boy that, whatever may be preached or inculcated, the man who gains the most respect from the mass of our society is not he who is most pure, brave, unselfish, and wise, but he who, by whatever means, raises himself above the need of toil for bread. Thus it is the accepted social standard that renders him 'sharp and pushing,' and the public-school system simply gives him skill. Instead of a highwayman, it makes him a pettifogger; instead of a burglar, a forger; instead of a pickpocket, a fraudulent bankrupt. This standard does not place him who, whatever his state or calling, distinguishes himself by virtue and unselfishness, highest in the social scale; it places far above him the successful swindler, the brazen and skilful thief, the cunning hypocrite, the hard and cruel taskmaster, the faithless office-hunter. Success in the basest sense is the pass-key to social eminence."

The College is not responsible for this debased standard, but it is responsible for the sentiment which discourages honest industry. "The feeling so common among college men, that they are *too fine-grained for business*," says the New York *Times*, "is the silliest sentimentalism."

A New England school trustee responds to Mr. White as follows:

"One great trouble in our schools is that children are not taught to think, but to repeat. The memory is the faculty cultivated.

Facts are of little use to any man if he does not know how to use them. We turn out an army of little parrots who soon forget all that they have been taught to say. I was trustee of a school, and was present at a recitation in geography. The pupil on his legs gave us the boundaries of Greece with fluency, and went on to describe it as 'a salubrious country.' One of my colleagues stopped him by the question, 'What does salubrious mean?' He could not answer, and not a boy in the class could help him. The teacher tried to explain, but could not mend the matter.

"I believe that our common-school system, whenever it goes beyond the 'three R's,' must necessarily lead to vice and crime, because it makes young people who have no chance in life except their own exertions look upon manual labor as degrading. In a large New England village where I have a foothold it is taken for granted that you cannot get any useful work out of a boy or girl who has been to public school."

How very common is this idea that our common education is hostile to useful industry. President Garfield speaks of the great pleasure he felt, when a teacher, in encouraging and assisting young men to obtain a thorough education, and the prejudice of their parents, who feared its demoralizing effects. One of the fathers to whom he appealed in behalf of his son expressed the common sentiment as follows:

"I don't reckon I can afford to sind him any more. He's got eddication enough for a farmer already, and I notice that when they git too much they sorter git lazy. Yer eddicated farmers are humbugs. Henry's got so far 'long now that he'd rother hev his head in a book than be workin'. He don't take no interest in the stock nor in the farm improvements. Everybody else is dependent in this world on the farmer, and I think that we've got too many eddicated fellers setting around now for the farmers to support."

This protest of the industrial classes has not led them to devise a better system which would not produce indolence, nor has Mr. White proposed any remedy for the evils which he has painted in dark colors with some degree of exaggeration. A New York teacher says in reply to Mr. White:

"Where boys and girls grow up ungoverned and with evil propensities, there the parents are to blame, not the schools. There is absolutely nothing that can take the place of proper home training, so far as concerns morals. Now, in some districts nearly all the pupils belong to the tenement-house population, subject to all

the evil influences of tenement-house localities. Teachers in the schools in such neighborhoods are beset by difficulties, such as Mr. White can have no conception of, unless he has spent much time in investigating. Fifty per cent of the pupils above ten years of age can have their own sweet will about attendance and punctuality; yet not infrequently teachers of large classes secure one hundred per cent in attendance and punctuality for weeks together. This is a very significant fact, for it is indicative of a teacher's great personal influence when such results are obtained in the face of such difficulties. In this connection I may add that there is nothing more universally conceded among educators than that a good teacher, or a good school, is known by the pupils' behavior outside of the class-room and of the building. If I had Mr. White's private ear I could tell him of case after case where idle, vicious pupils were labored with and stimulated to improvement in manners and morals; of boys, lazy and almost unmanageable at home, being imbued with higher motives; of lying ones who have been made to feel the manliness of truth; of impudent young scamps made respectful and gentlemanly in behavior; of cringing, cowardly natures imbued with a manly and womanly self-respect; of teachers who have taken pains to counteract the dangerous influences of bad reading by lending to the pupils books such as awaken in youth a taste for healthful literature; in a word, of good results growing out of duty done."

The moral defects of our school system are not compensated by intellectual excellence. An able writer in the *Penn Monthly* states truly the parrot-like character of common education as follows:

"It is said that a gentleman who fell in with one of our schoolboys offered him 'a quarter' if he would tell him the name of all the capitals in Europe. It was done, and quickly. 'Now,' said the gentleman, 'I will give you another quarter if you will tell me whether they are animals or vegetables.' 'Animals,' was the ready and confident answer.' The writer says of geography: 'By far the greatest part of what is taught under this head in our schools is the merest phantasm of knowledge—is rather a deterrent from any further seeking than a help and an impulse to it. And the time spent in memorizing the contents of books and maps, in every section and class of our public schools, is for the most part sheer waste. The student has no more real knowledge, after he has completed the course, than when he began. The facts that he has learned, though correct enough in themselves, are lies by implication, in that they are put forward as a description of what they do not describe. They contain no discipline of the mind. They only burden the memory; and after spending years in learning every speck on a large school atlas, the scholar generally spends a few more in getting utterly rid of it.

"Alongside these books generally stands an English grammar, modelled after some of the worst specimens of Latin grammars. A graduate of the university that numbers Lindley Murray among her alumni, ought perhaps to deal tenderly with this class of books. Their chief fault is their attempt to treat a living language by the severely analytic method that is only possible with a dead one. They are guilty of linguistic vivisection. The student of their wearisome pages will go on talking bad grammar all his life, if he have no better or more practical instruction than they give—if he be not instructed by the example of persons who speak English correctly, or by the study of English literature.

The New York *Sun* says of college graduates that it is for the want of thorough mastery of anything "that so large a share of college-bred men are supernumeraries in society. They are unused to manual labor, and there is no sort of intellectual labor for which they have been specially fitted. They have been taught, but they cannot be successful teachers; they have learned languages, and have studied logic and rhetoric, but they cannot write logically or acceptably. They have struggled with the rules of grammar of Latin and Greek, and yet they may not be able to speak or write English correctly, not to say forcibly or elegantly."

Still stronger testimony comes from West Point, which was published in the report of the Board of Visitors for 1875:

UNITED STATES MILITARY ACADEMY,
June 12, 1875.

Referring to our conversation this morning, I have to say that from my experience in the examination of candidates for admission to the Military Academy, I am satisfied that there is somewhere a serious defect in the system of instruction or in its application in the schools of our country for education in the elementary branches, particularly in arithmetic, reading and spelling. I think our candidates are not so thoroughly prepared as they were twenty years ago.

Very respectfully yours,
A. S. CHURCH,
Professor.

Shall we be told by conservatives, in answer to this proof of the failure of their educational schemes, with all their improvements, their great diffusion, and their vast outlay, that it is impracticable to do anything better, or that it would be too costly? Experience everywhere proves the practicability of moral and industrial education and their actual economy. The city of Paris furnishes an ample illustration in its experience of industrial schools.

For industrial education on the apprentice system, which costs nothing, being a source of profit, we may look at the great printing establishment of MM. Chaix & Co. The apprentice pupils, of whom there are thirty or forty, during their four years' apprenticeship have two hours of daily instruction, and are paid during that time from ten to fifty cents a day in composition and from fifteen to ninety cents at presswork—thus acquiring literary and industrial education, while earning a living and generally entering into the employment of the company when their term is finished. This is a plan practicable in all large manufactories.

In the St. Nicholas Institution, which has been in operation for fifty years, boys about eleven years of age who can read and write are received and taught, paying six dollars a month for board and lodging. Two hours daily are given to both studies and drawing, and the rest of the time to work. They receive a little pocket-money when well trained, and in three or four years leave the school so thoroughly trained as to command the highest wages, nearly twice as much as ordinary workmen. There are about nine hundred pupils in this self-sustaining school.

The city of Paris spends about twelve thousand dollars annually on an industrial school which gives gratuitous instruction and also pays the pupils from thirty to sixty cents a week, giving them five hours a day of both studies, drawing and modelling, and six hours of work in wood-turning, pattern-making, carpentry, metal-working and forging. Boys who have completed their primary education enter this school at thirteen or fourteen years of age, and after three

years are turned out as skilful workmen commanding high wages.

In these and many other schools it is demonstrated that industrial education is not only cheap but profitable, and that it permanently elevates the social status and prosperity of the pupil.

Belgium has an excellent training-school for servants, "L'Union Nationale des Dames Belges," which is not only a training-school, but a home for servants out of place, and a refuge for the sick, old and infirm. It has sixty-eight workshops for industrial education, and fifteen technical schools, and numerous colleges, besides about a hundred and fifty schools of various grades and objects, for horticultural and agricultural instruction.

Paris has opened a new school of horticulture, in which free botanical instruction is given, and annual exhibitions held. It looks to the culture and acclimatization of all useful plants, shrubs and trees, and the study of their products, for which there is a museum. The government under its new educational system is extending agricultural instruction throughout France.

One of the grandest triumphs of industrial and moral education is that now in progress in Hampton College, Virginia, under General Armstrong, in which has been shown how to make enlightened and useful citizens of the Indians and the black population of the South. The system pursued at Hampton College, if generously sustained by the government, would put an end to Indian wars, and by placing the negro on an equal footing of intelligence and worth with the white man, bring prosperity and harmony to the South.

Indian education was successful in the Choctaw nation long since. According to Rev. S. O. Lee:

"Twenty years ago almost the whole Choctaw nation could read and write their own language. They had a newspaper principally printed in Choctaw. They had the New Testament, part of the Old Testament, and some forty other publications, including a hymn-book, school-books, etc., in their own language. Then hundreds of their children and youth of both sexes were in the

various boarding-schools getting an education in English, while some were constantly in the academies and colleges at the East, seeking to add other knowledge to that gained thus at home.

"The people usually lived in houses; in fact, in a residence of two years, during which I travelled across the country from east to west, and from south to north, besides making many shorter trips in various directions, I only saw one tepee, or wigwam. They had a regularly organized government, with a written constitution and laws. One of the first laws passed was one prohibiting infanticide.

"Nor was this all. The moral and religious progress was even greater. Dr Cyrus Kingsbury, who founded the Choctaw Mission in 1818, and who labored among them more than 50 years, told me in 1859 that the change was wonderful. When he went among them there were but two Choctaws known who would not get drunk. Their women, as among all savages, were practically slaves. They had added to the degradation of heathenism many of the vices of the civilized life. I lived among them from 1859 to 1861, and did not see as much drunkenness among them as one will see in one of our villages in two months. The importation of intoxicating liquors was prohibited under penalty of fine, as well as the destruction of the liquor. This law was quite strictly enforced."

Industrial added to moral education solves the great national problem of making every man an enlightened and orderly citizen, while enabling those who aspire to lead in patriotic and scientific careers to carry themselves onward from the humblest position by working and paying their way. "It need be no discouragement," said President Garfield in a letter to a friend in 1857, "that you are obliged to hew your own way and pay your own charges. You can go to school two terms of every year and pay your own way. I know this, for I did so when teachers' wages were much lower than they are now. It is a great truth that where there is a will, there is a way."

But the majority of poor students are not so fortunate as to find a school to teach just when they need it, unless their services are utilized with their juniors in the school they attend. If, however, they spend four hours a day in labor, which is equal to three days of eight hours per week, such labor at ten cents per hour would meet their daily expenses, for a dollar and half per week will furnish all the food of nourish-

ing and wholesome quality which a man should consume.

It is true that our State prisons are so horribly mismanaged as to make it appear that the labor of a convict does not pay the expense of keeping and boarding him. Convicts besides the expense of guarding them are of less value than free honest laborers, but in the workhouse prison of Claremont, Allegheny county, Pa., under the enlightened management of Henry Cordier, 2385 prisoners were confined in 1875, the majority being for thirty days or less, for disorderly conduct, drunkenness, vagrancy, larceny, assault, robbery, and burglary, and the labor of these prisoners produced over seventy-six thousand dollars, while the entire expenditures and salaries cost less than fifty-eight thousand dollars. The health and morals of the prisoners were so improved that the death-rate was astonishingly low, less than two in the thousand, the habits and character of all were improved, the library was freely used, the school willingly attended, and the industry of some so great as to make a handsome sum for themselves by overwork.

The strength and prosperity of life consists in work. It is both an absurdity and an outrage on youth to deprive them of education in their chief faculty, their chief duty, their chief hope, the basis of their moral and physical health, and the means whereby the poor boy and girl might pay their way, and secure an education without a parent or a patron. In a proper educational system every worthy boy, every poor orphan, would find an open pathway to the highest rewards of talent, industry and virtue, and the nation's wealth of undeveloped mind would all be brought into service. We should say of our poor youth as Cornelia said of her sons: "These are my jewels."

But it is vain to urge any system of education if we are simply raising young men to be "food for gunpowder," and simply increasing wealth that it may furnish a basis for war debts. The crisis has arrived when we must choose between industrial education, peace and prosperity on the one hand, or on the other

the robbery, arson and homicide of war which has already gone to an unbearable extent and threatens if continued to bankrupt all European nations. The war debts of Europe have nearly trebled since 1848, and have about doubled in the last twenty years. The world's salvation depends upon the triumph of industrialism over its implacable foe, militarism.*

The difficulty in our educational system is not reached by criticisms on teachers and pupils, on sciolism and lack of morals and manners. It is a fundamental difficulty, pervading the whole educational system—it is a matter of undevelopment, of ignorance, and misconception of what education is and should be. The misconception pervades all society, all classes. Education is supposed to be a process for acquiring knowledge and strengthening the intellectual faculties, with some incidental improvement of character, but omits matters far more important than it comprehends.

It fails to realize intellectual development as it should, and this remark is applicable to the very best examples of teaching furnished by colleges and schools. In no institution of which I have any knowledge is the intellect cultivated completely without giving a Chinese predominance to memory † over the faculties that pursue and acquire truth. Nowhere is the power of reason so cultivated as to enable the pupil to discard prejudice and weigh the force of evidence against his own cherished opinions or those of his teachers. The most honored college graduate will ignore and toss aside, with puerile insolence, arguments and facts which, if heeded, might compel him to change his opinions. With all his mental discipline he is often

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* So intense is this antagonism, that about thirty years ago the officers of the United States ship St. Lawrence, were ostracized from a London military club, because that ship brought over the American contribution to the World's Fair!

† "Not more than one teacher in a hundred," said the New York *School Journal*, "attempts to do anything but listen to recitations and impose penalties and punishments when the recitations are imperfectly given."

inferior in the candid pursuit of truth to many of the uneducated classes, and the same remark is true of the majority of his professors. They have not taught him to follow the supreme guidance of reason, for they are not accustomed to following it themselves. The entire mass of mankind, professors, authors, and all, are, with few exceptions, creatures of habit, resting for life in opinions not formed by reason, but taken in by absorption, as plants absorb their sap from the rains that fall in their vicinity. The folly of the French Academy in rejecting Harvey's discovery of the circulation of the blood was due to this cause, and it is in perhaps as vigorous operation to-day as ever, producing the habitual rejection of whatever does not suit the prejudices of scientists, journalists, and authors. They see the folly of their predecessors and not their own. The art of reasoning to discover truth has never been taught in any college or practised by any faculty, and there never yet has been a period in civilization sufficiently advanced to tolerate kindly the pursuit of truth by fearless and elevated reason, for the world has always been so full of the errors of ignorance, undevelopment, bigotry, and selfishness, as to give a hostile reception to every such reasoner.

Of all the literary stultifications and pedantic waste of time for which we are indebted to the Dark Ages, the teaching of Aristotelian logic in colleges as if it conveyed the art of reasoning was the supremest folly. The syllogism was simply an interpretation or application of a general statement. It had not the power of reason to detect a falsehood, to prove a truth, or to originate a new discovery. The art of reasoning has never been understood (except empirically as it was instinctively used), and the nearest approach to its exposition, that of J. Stuart Mill, leaves much to be added; but the exposition of this subject, out of place here, belongs to my work on philosophy and philosophers. As our education has failed to develop the supreme intellectual faculty of reason, and to a very great extent has repressed or paralyzed it, so has it failed to develop the leading faculty, the pioneer faculty of

human progress, the power of invention or development of something new. The pre-eminent importance of this faculty in science and art as the organizer of civilization and prosperity should have secured for it some attention and cultivation in our educational system, but all that can be said is that we do not repress it quite as thoroughly as the Chinese repress all the higher intellect. When these faculties shall be cultivated, filling the world with philosophers and inventors, the march of intelligence and prosperity will be rapid and wonderful.

Up to the present time the general tendency of our so-called highest education has been not only to leave undeveloped the master faculties of reason and invention, which give to mankind their guiding wisdom and creative power, but to encase men in a shell which excludes the *reception* of truth and places the entire mass of humanity—College, Church, Government and all—at war with the Philosopher, the Inspired Saint, and the Inventor, for they are not inside of the bounding collegiate and authoritative encasement. They are emphatically *outsiders* to society—beyond the pale—beyond sympathy, respect or recognition, and until within one or two centuries they were martyred like Huss and Savonarola, like Bruno and Servetus, like De Caux and Pepin, and since the martyr period they are simply ignored, Boycotted or starved. The mass of the medical profession is a Boycotting organization against any higher wisdom which trespasses upon the limits of a creed and invites the stolid into new fields of thought.

Society generally—the literati and scientists generally—with a few grand and starlike exceptions, are blind as bats when the sunlight of genius from some new quarter strikes their dazed vision, and hence, as a general rule, our greatest authors have encountered saddening difficulties in obtaining any recognition or even finding a book-seller who will publish for them until a few genial and appreciative souls have given them a kindly welcome, and led the multitude in the right path—a blind multitude that ignores genius

without a prior fame, and accepts all trash that is consecrated by authority. Polidori's story of a Vampyre, when published in the name of Byron, was even more popular than the poet's own writings in France until it was disowned by Byron, and the antiquated rubbish of Aristotle is not yet consigned to oblivion. Carlyle and Hugo could find no book-sellers to issue their first works. "Sartor Resartus" had to wait seven years and then creep out through a magazine. Milton, Carlyle, Hugo, Brougham, Macaulay, Jeffrey, and scores of others could testify as to the reception of a great author's first works. Galileo, Kepler, Harvey, Galvani, Columbus, Swedenborg, Gall, Fourier and Priestley could testify as to the chronic stupidity of the educated classes to whom they appealed with so little success, and their successors to-day can bear the same testimony.

Four fifths of the true purposes of education are ignored. We neither make manly men and competent women by physical training (with a few exceptions), nor do we teach them how to maintain health and longevity, nor how to attain the great practical aim of life—independence by useful industry—nor how to live so as to attain the highest aim of happiness and perfection of character in the present life and its eternal continuation.

We do not develop the capacity and the desire for the pursuit and acquisition of valuable knowledge, which if developed would compensate for the failures of schools and insure the future intellectual progress of the pupil. On the contrary the pupil commonly leaves his task-work with a profound indifference to growth in knowledge if not a positive aversion to study; and hence libraries generally fail if they rely on popular support, or if they keep alive they do it by excluding useful knowledge and furnishing trashy fiction.

The Chicago *Advance*, speaking of a circulating library, says: "There were three thousand volumes in the library, and they were all fiction. Not a sign of anything else! 'A book of any other character would

be so much dead loss,' was the remark of the librarian. 'I must buy the books that people read or I could not live.' 'The sillier a story is the more eagerly it is caught up and read.' 'Are your customers mostly young people?' 'No, there are as many middle-aged and old men and women as there are young people, and the silliest novels are as eagerly read by the old as by the young.' The vast amount of this mental imbecility which can be stirred by nothing but fiction is due to our educational systems."

We do not by education supply the State with steady producers of wealth, and honorable enlightened citizens, but leave to accident the development of the mighty army of paupers, tramps, swindlers, robbers, peculators, public plunderers, assassins, drunkards, lunatics, imbeciles, and the scrofulous, consumptive, short-lived wretches whose existence has been a burden to themselves and others. Our system of education rather increases than diminishes these evils by leading the pupils away from efficient industry which is the tendency everywhere. A prominent French citizen, M. Salicer, says in an able educational work, speaking of the distaste for work developed in the elementary schools: "These little bureaucrats come to the end of their school course with but one fear before them —that of being forced to become workmen and workwomen; and with but one wish—the boys to become clerks, the girls shop-women. Hence this undefined, uncertain, overstocked class of book-keepers, cashiers, salesmen, clerks, agents, scorning cap and blouse, and the corresponding class, still more to be pitied, of young ladies of no shop, perhaps with the coveted attire, but, alas, how procured!"

The burdensome and the dangerous classes to whom the feeble sympathies of Christendom scarcely reach, increase with the increase of population, and burden us with the tax of hospitals, jails, and the costly machinery of courts, sheriffs and police, without producing security, for no one knows when he may be robbed, or murdered, or swindled, if not continually on his guard. Nor is there any end to public peculation

and the continual perversion of legislation How little influence our common schools exert is illustrated by the fact that of 17,341 arrests by the police of New York city in 1882 (October, November and December), twenty-nine-thirtieths were able to read and write. We cannot afford to continue this miserable system, when the remedy is so accessible and cheap, when we see by the teaching of experience and reason that moral and industrial education can give us a prosperous, peaceful, harmonious and enlightened nation, in which the eye shall no longer be offended and the soul sickened by the sight of human degradation.

But common-school, high-school and collegiate education such as we have had will not answer the purpose, for much of our education has been positively demoralizing.

"The very fact," says Prof. Niles, "that most students regard the termination of their literary course as a release from an irksome bondage, shows conclusively that there is some radical defect in the government. The professor too often exhibits all the austerity of the judge unmingled with the tenderness of an affectionate guardian. And how often is the recitation-room witness to the peevish fretfulness of the patience-tried pedagogue."

"In almost all our public seminaries the officers and students form two distinct parties. If obedience be rendered at all, servile fear is the motive. Consequently no moral turpitude is associated in the student's mind with the commission of vice, provided a college law is securely violated. The moorings of conscience are sundered, and the impetuous tide has thus swept many a youth of promise and hope into *irrevocable ruin*. Those who have any experience in managing the affairs of a public seminary will bear testimony that we have not exaggerated."

This system, against which scholars rebel, is not attractive to the lowest classes who most need elevation, and when forced into it they are not much elevated. Miss Rhine, speaking of the failure of the Evening High School in New York, makes a clear exposition of the subject and of the reform that is needed:

"A reason for this failure may be found in the course of study, which has not been sufficiently practical to advance the interests of those for whom the school was designed.

"A review of the curriculum of the Evening High School shows that the most useful study taught is that of book-keeping. Also that

this branch has from first to last been most extensively patronized. In the statistics for 1878 it is seen that out of an average of 1600 pupils, 354 were students of book-keeping, 297 were in the arithmetic classes, and 205 studied penmanship. These together make an aggregate of more than half the registered scholars. This striving after gentility influences many boys and girls with parents employed in the useful handicrafts to endeavor to raise themselves above their class by seeking for positions at desks or behind counters. The result is that the supply is now so far in excess of the demand that it has been calculated there are on an average over three hundred aspirants waiting for every vacant clerkship. A New York merchant advertised a short time ago for a book-keeper. A hundred applications were made in less than twenty-four hours.

"In this respect the experience of New York is that of other large cities. Complaints from the same cause come from the commercial centres of Germany and England. France, whose educational facilities at present perhaps outrank the world, protests against this overcrowding in the mercantile walks of life.

"Americans, hitherto proud of their free-school system, are also now asking whether an education producing this result of overcrowding one or two channels of trade is the best that can be devised, and whether the scholastic branches have proved failures or successes.

"To these questions, statistics of crime and education have given an answer. 'The history of crime,' said the late Samuel Royce, a keen investigator, 'is but the history of our education.' Prof. John W. Draper, in a work upon physiology, asserts that our common education has a tendency rather the reverse of restraining crime. Herbert Spencer, Ruskin, Huxley, and others of the world's great thinkers take the same position.

"Not satisfied with mere assertions, Mr. Richard Vaux, of Pennsylvania, gathered an exhaustive array of statistical facts to prove the relativity of crime and idleness to education. Through these he shows conclusively that a certain amount, or rather an uncertain amount, of learning, unless supplemented by a knowledge of something useful to the world, augments, instead of decreases, crime. In support of this statement he gives the following figures, covering an interval of twenty-six years. These facts were gathered in person from the records of the convicts of the Eastern State Penitentiary of Pennsylvania.

Years.	*Received.*	*Illiterate.*		*Could read and write.*	
		No.	*Per cent.*	*No.*	*Per cent.*
1850–59	1,605	243	15.14	1,115	60.47
1860–69	2,383	410	17.21	1,677	70.37
1870–76	1,650	361	21.88	1,235	74.85

"From these figures it can be seen that the educated convicts were four times as numerous as the illiterate. Nor is this an isolated case, facts of a similar kind having been compiled by others in various places, giving a like result.

"From these investigations the conclusion has been reached that the greatest preventive of crime would be industrial education. Mr. Vaux, whose position for many years as President of the Board of Inspectors of the Penitentiary of Pennsylvania gave him information not easily accessible to others, recommended in his reports the 'absolute imperative necessity for engrafting in the present school system practical trade knowledge.' In support of this statement he gives the following statistics, to show how much less the per cent is of apprenticed to unapprenticed criminals:

Years.	*Received.*	*Unapprenticed.*		*Apprenticed.*	
		No.	*Per cent.*	*No.*	*Per cent.*
1850–59.....	1,217	839	75.42	378	24.18
1860–69.....	1,950	1,617	81.83	333	18.17
1870–76.....	1,463	1,276	88.66	187	11.30

"These facts show that the object of all schools—and particularly night-schools, which ought to be essentially the people's schools—should be to teach mechanical branches: to teach the struggling, the unemployed, and the incompetent, not how to construe Latin, but how to earn a living. Skilled labor is the preventive of crime.

"Nor is this scheme of industrial education a new scheme, as many opponents have urged. As early as 1793–1803 Berlin had nine industrial schools; three are to-day in successful operation. Austria, in 1872, had over 9000 such institutions, two of which were for the purpose of teaching blacksmithing.

"Book learning, it has been found, does not mean food, shelter and independence. Whatever does not bring these leads to crime.

"Money should be no consideration, for the means expended in making self-supporting citizens returns again tenfold to the people; while what is expended in making men scholars of no trade must be further supplemented by giving means for prisons, poor-houses, and other eleemosynary institutions. How much is paid for these latter may be gleaned from the reports of the State Charities Aid Association for 1879, which gives as the disbursements for that year the enormous sum of $26,000,000.

"Among the recipients of these charities, we are told, were crowds of able-bodied men, individuals who should have been at work at self-supporting industries, but who were incompetent through ignorance. If the object of education be to remove the causes of such shameful expenditures, and it can be accomplished by industrial schools, the teaching will be cheap to the nation at any cost.

"When the object of tuition in night-schools shall be practical industrial teaching, when the sound of the carpenters' hammers, chisels and saws shall be heard, along with the noise of printing presses and the hum of the other manifold industries produced by civilization, it will be seen that such institutions will have charms to gather together that population which now prefers, rather than the dull routine of the schools, to roam the streets, acquiring those dissolute habits which eventually lead to prisons and other State asylums supported at enormous expense to the people."

Similar ideas have been illustrated and enforced in the criticisms of R. G. White:

"Handicraft seems to be falling into neglect. The number of artisans who thoroughly understand their craft and take a pride in doing good work seems to be diminishing at a rate which is perceptible from one five years' end to another. Indeed, it is almost notorious among all those who have occasion from time to time to employ skilled labor, that if they need the services of, let us say, a carpenter, a watch-maker, a painter, or a cabinet-maker, they cannot be sure, without some troublesome inquiry, that the work will be done in a workmanlike manner. This uncertainty has no reference to that skill and taste which are the personal attributes of the individual workman, and give one man a reputation which another can never attain, but to that knowledge and skill, at once elementary and complete, which is possessed by every artisan who has 'learned his trade.' I am sure that the experience of most readers of the *Times* will sustain the assertion that, except in shops where the highest standard is maintained and prices are really exorbitant, there is no certainty that work will not be 'botched' and 'scamped,' and sent home with a surface finish which conceals bad workmanship; that men will come to a house pretending to be skilled workmen in wood or in metal, such, indeed, being their professed vocation, and do their work so ignorantly and unskilfully that they injure and even almost destroy the articles committed to their hands. Against such wrong as this we have in this country practically no remedy. We must not only submit to such damage, but pay for having it done, for success in legal resistance is hopeless.

"This lack on the part of artisans of a thorough knowledge of their craft corresponds, it will be seen, to that lack of thoroughness in our elementary education which experience and investigation have brought to light. The defect is not peculiar to this country, although it is much greater here than elsewhere, and it has various causes which are operating all over the world, but nowhere with an effect so great and so deplorable as here. The fact is as indisputable as the other fact, that now most children of 14 or 15 years of age cannot read well or write well or practise readily the common rules of arithmetic, and in both cases the cause is the same—defective education; or, rather, the lack of any training which may be properly called education.

"It is inevitable that apprenticeship, so far as it is a thorough training for the practice of any craft, will ere long practically disappear. There are in this country now hardly any apprentices properly so called; and we are, therefore, as to the future, deprived of the means by which skilled artisans have been made in the past.

"What is to be done in this emergency? Some remedy must be found; and, of course, a remedy will ultimately be found; but the problem is a difficult one, and it is not improbable that trouble may come in its solution. It would seem that a government (that is, with us, a people) that could undertake the task not only of edu-

cating all of its citizens, but of compelling them to receive education, might find in the social and political necessities of this case a justification for supplying the means of instruction in the various arts and crafts which are suffering, and which seem destined to suffer more hereafter, from the disuse of apprenticeship."

Private benevolence is doing what governments neglect. The Lord Industrial School, 135 Greenwich Street, New York; the Women's Educational and Industrial Society, 47 East Tenth Street, New York; the Free School of Industrial Art, lately established at 31 Union Square; the Wilson Mission House or school, in St. Mark's Place, near Avenue A, for industrial instruction, show that the "will" of the benevolent will "find a way" to remedy the defects of an antiquated system of education.

One of the most judicious and practical institutions is the "Worcester County Free Institute of Industrial Science," at Worcester, Mass., intended to combine school-work and manual labor. The graduates of this institution will be qualified for taking positions in manufactories, for taking the direction of architecture and engineering, and for teaching any department of industrial science. The theses of the graduates are devoted entirely to mechanical subjects.

Experience in manual labor schools in the United States has long since demonstrated that by combining work and study we may reduce the expenses of education at least one half—improve the health, energy and cheerfulness of the pupil, increase his efficiency in study, prepare him better for active life, and do much to diminish the separation or alienation between the rich and poor. Such were the conclusions reached by a committee of the Pennsylvania Legislature after careful investigation. Not less than fifty eminent teachers and writers on education from the time of Milton and Locke to the college presidents and professors of to-day have urged the importance of uniting labor and study.

Industrial education would at once change the social condition, by enabling artisans through better wages to attain greater independence, by diminishing the

amount of ignorant, pauperized labor, which is crushing itself in competition for employment, and by increasing the number of employers; finally by enabling woman to sustain herself in this competitive struggle.

The demand for ethical, industrial, and physiological education is, with all our progress, still the great demand of humanity—a demand as urgent as the demand for fresh air with the victims dying in the famous Black Hole of Calcutta—for millions are hurrying on in every nation to degeneration, misery, and death.

Our modern educational systems, greatly improved as they are, are signal and dismal failures, having utterly failed to check the barbarian impulse of war, failed to control intemperance, failed to develop manhood and health, failed to develop the reasoning faculties, and failed to evolve any system of society not rotten with pauperism and crime.

Of all the dismal facts which a pessimistic philosopher might plausibly array to prove the impossibility of the ultimate elevation of society, and to show the absence of divine benevolence, there are none more gloomy, disheartening and terrible than the fact that society has been steadily degenerating, in spite of the vast amounts expended in education, in spite of the improvement which has been going on for fifty years in the philosophy, the principles and methods of education; in spite of the vast multiplication of schools and colleges, and the diffusion of free tuition, which has everywhere reduced the number of the illiterate, and bids fair in another half century to give the elements of education to every individual in civilized nations; in spite of all this, the degeneration of society in happiness, in virtue, in health, in physical and mental capacity—in everything which renders life worth living—has been going on singularly parallel with the improved systems of education—so closely parallel that a cynical observer might argue that education itself was dragging humanity down to a lower existence than that of the skin-clad barbarians of old. Such a conclusion would not be true, but it certainly is true that much of our education produces physical

degeneracy, and that the entire system, in a world-wide view, has utterly failed to prevent both physical and moral degeneracy.

If our education, directed solely to the literary-intellectual capacities, and not to the practical-intellectual, nor to the virtues or the energies, has any elevating and redeeming power,* it has not been able to show it clearly in competition with the overwhelming degradation-power which arises from crowded population, monopoly, taxation, competition among the poor, isolation of classes, accumulation of all wealth in a few hands, and consequently intensified poverty, privation, filth, and malaria, which would result in wide-spread famine and pestilence if these debasing agencies were not counteracted by the diminishing fecundity and rapid mortality of the lower classes.

The debasing agencies which act upon the majority of society in Europe, and which, as population accumulates, are beginning to act in the United States, must affect *the entire community*. A remarkable illustration of this is seen in the fact, recently published in the *British Medical Journal*, that the size of the head has been diminishing in England and Scotland during the last 25 years, according to the testimony of hatters,

* What elevating or redeeming power could be found in the contest between pedagogic tyranny and obstreperous animality which teachers have so often described? An old number of the *Annals of Education*, published at Boston, contains the following illustration of the moral status of American schools: "Is any outrage committed on the regular constituted authority of the institution, any palpable violation of its statutory laws, and do the faculty take the proper measures to repel the mischief and inflict deserved punishment on the offenders? The spirit of wild misrule at once breaks forth; all regard to decency seems obliterated; college property is wantonly destroyed, and acts of violence are perpetrated with the license of a city mob; the persons of instructors who have become gray in the wasting labors of their station, who have spared no effort for the literary and moral welfare of these thoughtless and ungrateful pupils, are grossly insulted, and even the majesty of Heaven impiously dared by the sacrilegious exhibition of demoniac passion in the place consecrated for evening and morning worship. All this occurs in our seminaries for liberal education." This description of schools forty years ago is not yet entirely out of date.

who say that a large hat is rarely called for now, and that there is a decline of two sizes in the average supply; the largest heretofore, according to hatters, have been those of Scotland and northern England, which corresponded to the superior mental vigor of the Scotch. In the middle region, hatters made larger hats for the northern than the southern market. A general decline of brain development is one of the surest indications of national degeneracy. But we have every other indication of this degeneracy—especially that most fatal of all degeneracy, *in virtue and happiness.*

As the ravages of intemperance may be measured by the deaths it causes, so may our social and moral degeneracy be measured by the growth of suicide and insanity. The latest reports indicate the continuous progress of degeneracy in Europe, other great cities approximating the gloomy condition of Paris as to suicides. Between 1875 and 1878 Paris had 400 annual suicides to the million of inhabitants; but Vienna had 285; Berlin, 280; and Leipzig, 450. The total of suicides in France has risen from an annual average of 3639, between 1851 and 1855, to 6496 in recent years.

Insanity in France far exceeds suicide. The estimate of lunacy in 1881 is at the rate of one lunatic for 400 inhabitants, or 2500 to the million. This development occurs chiefly just where modern education reaches its maximum power in the stimulation of intellect and selfish soft-handed ambition, unacquainted with productive industry, keen in its sensibilities, and strong in its ungratified senses. Artists and lawyers furnish ten times as many lunatics in proportion to numbers as those who are occupied in the honest toils of agriculture.

The world has to-day about a million teachers, of which recent statistics give the United States 271,144. We have about 360 colleges and universities (exclusive of female institutions), of which 332 have been established in the last sixty years. Collegiate institutions have increased fourteenfold, while population has increased fivefold.

The annual income of American colleges for the last few years exceeds two and a half millions of dollars, which ought to have been the most effective and beneficial of all educational expenditures, by giving us an army of original thinkers and social leaders, but is perhaps the most costly and least profitable of all educational undertakings—vastly better, however, than those magnificent failures of an effete system, the universities of Oxford and Cambridge, which enjoyed an income of $3,770,000 in 1871. Such costly failures are not to be expected in America, but if we look for the valuable results of our grand collegiate endowments, we shall look in vain for any great elevation of the moral impulses of humanity, any great development of original thought, any signal emancipation from the stereotyped ignorance and prejudices transmitted from the first half of the century, any elevation of science from the deep, dark, and narrow gorge of materialism, in which it has been flowing, or any wide opening of the doors of the temple of knowledge to the thousands of poor aspiring youth for whom their endowments are ample. Columbia College, with property amounting to $4,763,000, Harvard with $3,615,000, Johns Hopkins with $3,000,000, will never under the present collegiate policy exhibit any adequate returns for their investments. The first demand of an American educational corporation (unlike the German) is for a fine building, to which all other objects must be sacrificed, and in the entire programme of education utility is sacrified to ostentation and reason to memory. Institutions which should diminish our social inequalities by assisting the aspirations of the lowly, increase the disparity and alienation of classes by educating the higher class in aspirations associated with a scorn of manual labor.

New York spends more than four times as much per capita in education in 1880 as she did in 1850. The population of 3,097,394 in 1850 has increased two thirds in thirty years, being, in 1880, 5,083,173, but the public expenditure on education has increased from $1,600,000 to $10,290,000; and her investment for col-

legiate education amounts to $14,794,000. Yet New York is no happier than she was thirty years ago.

Five States—New York, Massachusetts, Ohio, Illinois, and Maryland—have an aggregate collegiate endowment of thirty-three and three fourths millions of dollars, but if it were three hundred millions it would not under existing educational systems be a redeeming and elevating power, though it might add greatly to the literary polish of society, to the cultivation of the exact physical sciences, to the ambitious desire of authorship, and to the aversion from simple industrial pursuits; but these are not forces that make the world much better or happier.

The statistics arrayed by Mr. Royce, in his work on Race Deterioration, have placed the alarming fact beyond a doubt that a deterioration of the race has been in progress. Such a deterioration has often been noticed by physicians, and I shall freely use the statistics of Mr. Royce, though I have not had time to verify their accuracy.

Let us first observe the immense progress in education during the last fifty years, and then look at the social condition of man, to see whether it has been improved or debased at the same time.

The United States had no common-school system at the beginning of the century, but have now about $200,000,000 invested in common-school property, and spend about a hundred millions annually for the services of teachers.

England in 1841, while spending three and a quarter millions in the suppression of crime, gave only $50,000 from Parliament for primary education. In 1872 the Parliamentary appropriation was $7,757,800. Church expenditures also have increased. The incomes of the clergy of the established church were in 1850 $16,250,000, were in 1880 twenty-two and three quarter millions, and during that time $16,000,000 were expended in erecting parsonages.

France had a million scholars under primary instruction in 1830; in 1868, 4,442,421. In 1828, about 35 per cent of the soldiers of her army could read; in 1860,

70 per cent. The French government in 1828 gave but 50,000 francs for the people's education. In 1873 Paris alone gave 11,132,046 francs. The rapidity of French progress is shown by the fact that there were in France less than two thousand school libraries in 1862, but in 1866 there were 10,243. Belgium advanced with equal rapidity, having, in 1830, 293,000 children in primary schools, and in 1848, 462,000.

Germany, with about 2000 university professors and 20,000 university students, is the most highly educated country of Europe, and the proportion of illiterates in the army recruits was in 1878 but 2.5 per cent.

If the education thus rapidly increased had been a *real education*, a development of soul and body, we should expect an improvement of morals, a diminution of crime, a diminution of insanity, idiocy, and suicide, a diminution of vagrancy and pauperism, a diminution of mortality, an increase of longevity, and an immense diminution of poverty. Alas! alas! nearly all statistical records seem to agree in the alarming fact that during all this development of education the misery and degradation of human beings has not been alleviated, but terribly aggravated. Educated society is more wretched than its ancestors, simply because there is little or nothing in the educational systems to make men better, stronger, healthier, or wiser, and much to impair the health of the body, the vigor and independence of the mind, and the power of the moral faculties. The government of France recently appointed a committee to look into the various effects of schools upon the sense of vision in their pupils, but it would have been wiser to extend the investigation into much greater evils—the general impairment of physical health, the loss of practical energy and usefulness, and the low grade of the moral life.

That the aggregate result under our educational system has been an increase of misery—the gilded misery that flows around the triumphs of architecture and of art—is shown by the great increase in the number of those who have found life not worth living and

have hopelessly sought the grave, in which they expected the insensibility of eternal nonentity.

In Prussia, during the thirty-five years prior to 1858, the annual number of suicides increased from 510 to 2180. In February, 1882, there were reported by newspapers 17 suicides in one week in Berlin. In Denmark, between 1839 and 1856, the increase was from 261 to 414. In France, from 1830 to 1855, from 1739 to 3639. The increase of population was less than one seventh, while the suicides more than doubled. In the first thirty years of the century, suicides in Paris were more than tripled, and in the first twenty years at Berlin more than quadrupled. The annual number of suicides in the rural districts of France at a recent period was 110 in the million; but in Paris, the focus of education, 640, and in Copenhagen 477. The least educated nations of Europe, the Spanish and Slavonian, have the fewest suicides—less than half of the average rate of France, Germany, and England.

Another proof of the increase of misery and personal degeneracy during the increase of educational appliances is seen in the growth of insanity. The number of insane and idiotic in asylums was in

France,	1835	10,529
	1869	38,545
England and Wales,	1859	36,762
	1876	64,916
Ireland,	1844	10,855
	1863	16,256
Belgium,	1852	4,054
	1864	5,441
Netherlands,	1844	837
City of Berlin,	1864	275
	1866	377
	1868	3,179

This increase of insanity is not explained by the small increase of population. The ratio of insane to the population was in the

Rhenish Provinces of Prussia, in	1828	1 to 1,027
	1856	1 to 666
Nassau,	1840	1 to 607
	1858	1 to 318

The increase of insanity in Wurtemberg since 1832 has been almost six times as great as the increase of the population.

In England, insanity has so increased that among the poorest classes the insane are between four and five per cent of the population; of the entire population in 1880, there was one lunatic to every 357 persons.

In the United States also, the increase of insanity has vastly outrun the increase of population. In 54 asylums there were, in 1839, 1329; in 1849, 7029; in 1859, 13,696; in 1869, 22,549.

New York shows a remarkable increase in four years. In

Year.	Insane.
1870	4,761
1871	5,073
1873	6,003
1874	6,279

A late New York legislative report says "the rapid increase of insanity is truly alarming," especially among the poor; that insanity is becoming more incurable, and the allied nervous disorders increasing also; and perhaps a similar degeneracy among those not considered insane is shown in the building of the Buffalo Insane Asylum, at a cost of "more than *four thousand dollars for each inmate*," and of a capitol building for thirteen millions, running probably to fifteen, not more satisfactory than the old one torn down, which cost about a hundred thousand!

Massachusetts shows the same increase in the five years from 1867 to 1872. The ratio was in

1867	One for every	1,546
1868	" "	1,486
1869	" "	1,533
1870	" "	1,350
1871	" "	1,389
1872	" "	1,357

Thus insanity has been everywhere increasing, and especially in that portion of the population which has

received the most education—the least educated rural population having the best physique and the soundest mentality. Insanity and suicide, which is the next thing to it, increase together in the educated population of cities, and as the population of civilized nations generally is crowding into cities, the moral, intellectual, and physical degeneracy is steadily increasing —a frightful concentration of *poverty, pauperism, crime, insanity and physical degradation.*

The following statistical facts compel us to recognize the downward progress of the race under modern education, and the imperative necessity of a change in our educational system. They show that pauperism and crime have increased, that infant mortality and general mortality have increased, the length of life has diminished and the stature of the race diminished during the present century, as well as the general manhood, health, happiness, and soundness of mind.

For example, from 1816 to 1840 about one fifth of the military recruits in France (according to Michel Levy) were rejected for defective physical development and health, and the decline of stature has been such that the military standard was lowered from 1.598 to 1.560 metres. Yet from 1837 to 1856 near nine million recruits were examined for European armies and 53 per cent rejected; 1,576,815 were below the standard, and 3,097,016 infirm. The degeneracy was least among agriculturists.

Decline of the Value of Life.

The tests for the army give sufficient evidence of national decline, and will of course be verified by every other test. Longevity has been diminishing generally. Between 1830 and 1860 it has diminished two years in Prussia according to Dr. Engel. According to Marc D'Espigne it has diminished three and two-thirds years at Geneva, between 1814 and 1845.

According to W. R. Gray the rate of mortality in England has increased from 10 to 12½ per cent from

1820 to 1842, and from 1844 to 1854 the annual mortality has increased (according to Neison) from 2.18 per cent to 2.22 per cent, which in a population of thirty millions would be an increase of 12,000 deaths annually.

The duration of life at Boston, U. S., according to Mr. Shattuck has been diminishing since 1821. Between 1821 and 1877 the number of infant deaths under five years has risen from 25 to 40 per cent of the mortality.

The infant mortality has very greatly increased according to statistics collected in France, Switzerland, Bavaria, Wurtemberg, and Muhlhausen—certainly an increase generally of more than 20 per cent. But among the more destitute classes it has been horribly and almost incredibly great.

Every form of degeneracy is greatest in cities, where the influence of education and intellectual excitement is greatest; and the increase of longevity from various social ameliorations in the two centuries prior to the present, has been lost since the beginning of the nineteenth century. It is not necessary to prove that education was the cause of this decline, but only that it has been unable to resist it.

Education controlled by benevolent purposes would have guarded against all social evils, but reckless of human welfare as it has been, it has permitted the laboring classes to be pauperized, and to be slaughtered in their occupations more fearfully than by war. A healthy and hardy nation engaged in constant war might have maintained its population and grown more rapidly than France and Germany grow in peace.

A single instance will illustrate the mortality arising from lack of hygienic education. Pulmonary consumption is a strictly preventable disease. It should not exist at all under a hygienic condition except as a rare incident; and the legitimate mortality from this disease owing to accident, exposure, and the influence of other diseases does not exceed five per cent of the mortality, yet among the workmen of Geneva the mortality from this cause varies from 33 to 60 per

cent, a mortality that might seem incredible did we not know the reliable character of the Geneva statistics.

This is one of the diseases especially favored by sedentary book-education and sedentary labors in the arts. It would be a sad and repulsive task to review the catalogued misery of the long array of diseases in educated nations.

I would mention merely one illustration—the increased mortality from small-pox, vastly increased in spite of the rigid enforcement of vaccination. The rapid and fatal diffusion of such a disease is simply a proof of the increased number of unhealthy constitutions, as a prairie-fire is a proof of the large amount of dried grass ready for combustion. The mortality from small-pox at the commencement of this century in England was very insignificant in amount. Vaccination was made compulsory in 1853; the epidemic of 1857–58–59 produced 14,240 deaths; the mortality continued increasing, and in 1870–71–72 the deaths amounted to 44,840.

Pauperism.—Let us turn to that form of total physical and moral degeneracy which appears as pauperism, which arises from degeneracy of mind, brain and body, and produces a rapid mortality and development of insanity and idiocy. A commission from the Legislature of Massachusetts in 1854 reported that "the pauper class furnishes in the ratio of its numbers 64 times as many insane as the other classes." One in 32 of the paupers were insane in England and Wales in 1862, and the ratio continues increasing, more recent reports showing one in 25 and one in 20. Pauperism in 1852 had risen to one thirteenth of the population of Paris, one twelfth in Italy, one eighth in London, one sixth in Belgium. In New York the increase has been in progress throughout the century, and rose from 58,000 in 1871 to 69,000 in 1874.

Intemperance, at once the symptom and the cause of physical and moral decline, has been increasing fearfully, and no one will contend that our educational system has exerted any protective influence against it.

Indeed the protective influence of religion is to-day being undermined by education. The London *Times* said a few years ago, "In our time we have suffered more from the intemperance of our people than from war, pestilence and famine combined." In March, 1881, it said, as quoted by Neal Dow, that

"Something must be done to redeem the nation from the slough of drunkenness in which it is now wallowing. The drink bill of the country, it says, *has enormously increased since* 1860, with multiplied horrors of every kind coming from drunkenness. In that year the drink bill was £86,897,683 or $434,488,415. In 1879 the cost of the liquor consumed in the Kingdom was £147,288,760 or $736,443,800. The *Times* says: 'Suppose an unexpected visitation of unexampled prosperity. How high would the total stand in the last year of the century? If there be any probability, one way or the other, it is that the year 1900 will be as much above 1880 as that is above 1860, and that the drink bill will then be £246,000,000 or $1,230,000,000! For the whole population of these isles the average expenditure in drink is more than £3 or $15 for every man, woman and child, and more than £15 or $75 for each family. It is vastly more than the public revenue; vastly more than the most inflated and extraordinary expenditure we have had for twenty years. It is more than ten times as much as is spent for the poor, watched by economists with such jealous eyes. As for the revenue of the Church of England, which many call monstrous, and which certainly is exceptional in comparison with other churches and religious communities, if it were brought to the hammer to-morrow, glebes, rent charges, parsonages, churches, episcopal and capitular incomes, everything down to the church furniture and parish stock of vestments, it would scarcely fetch the amount of last year's . . . drink bill. The workingman grudges a few pence for the education of his children, and spends often as many shillings in drink. He will not lay by as much as a shilling a week to provide for probable sickness and inevitable old age, but he spends, perhaps, ten times that sum in beer and spirits. But he is not the greatest sinner; far from it. His betters—lay, spiritual, professional, or trading—are generally far worse than he is. The gentleman in the pulpit who delivers weekly diatribes against drunkenness and improvidence, . . . often spends ten times as much, though he really wants it less. It is a very ordinary thing for the wine and beer bills to amount to £50—$250—out of a total expenditure of £500—$2500.'"

Nothing but the moral and industrial education of the *young* can stay this flood; churches, colleges, schools and temperance societies have failed because they labor upon adults, laboring to cure rather than

prevent. As well might we rely on saving a sinking ship and carrying on its voyage by depending on the pumps instead of repairing the broken and rotten planks below.

Where has not intemperance penetrated? Of course the soldiers of an intemperate nation are themselves intemperate. The British army in South Africa under Wolseley were thoroughly demoralized by drink, made the night hideous with their outcries, and sacked the stores, hotels and shops at Heilberg and Utrecht, as we learn by the correspondence of Dr. Russell.

The testimony of the Church, as given by a committee of the lower House of Convocation in 1869, is that "a careful estimate of the mortality occasioned by intemperance in the United Kingdom, including the lives of innocent persons cut short by the drunkenness of others, places the mighty sacrifice at 50,000 persons every year—a number thrice as great as that which perished on both sides upon the fatal field of Waterloo." This statement is very moderate. Dr. Norman Kerr, unwilling to believe in such fatality, has more recently investigated the question and decided that the mortality directly produced by alcohol is greatly above a hundred thousand annually.

According to most recent statistics, Great Britain has 26,114 breweries (a greater number than any other country), which produce an amount every year equal to *thirty-nine quarts for every inhabitant* of the kingdom.

The horrible intemperance of Great Britain during the last ten years has been fully displayed by the calculation of Wm. Hoyle, who shows that the expenditure for drink is more than twice the entire rental of the kingdom. In Ireland, with far lower rents, the average amount expended on liquor in ten years was £13,823,162, and the total rental £11,518,392. The enormous excess is found in England, with its high rental. The British consumption of beer in 1880 was 905,088,978 gallons, and of ardent spirits 28,457,486 gallons.

Sweden is still more intemperate, consuming, according to the report of our minister, Mr. Andrews,

about 2½ gallons of whiskey annually for each inhabitant, or about ten gallons for each adult male. In Germany and Switzerland the consumption of alcohol and tobacco is increasing, and Swiss manhood is declining. Germany smoked 7,000,000,000 cigars in 1880 besides her pipes, and progressed downward in morals, having 11,692 convictions in 1873; 12,844 in 1874; 12,127 in 1875; 13,197 in 1876, and 14,847 in 1877.

The most alarming fact in such statistics, which might be extended to fill a volume, is the long-continued *steady increase of intemperance, vice, crime and poverty, in utter defiance of all the agencies* now employed to check them.

In the United States we have the same alarming increase in spite of taxation, temperance societies and stringent legislation. The fermented liquors (according to the Commissioner of Internal Revenue) in 1870 amounted to 6,574,000 barrels; in 1880, 13,347,000 barrels were reported. There has been an increase of three and a third millions in the last three years. Of ardent spirits the report of the last year was a production of 71,892,621 gallons. The drink bill of the United States is commonly estimated at six hundred millions, and the number of saloons in the State of New York is over 23,000, according to the Commissioner of Internal Revenue. The Temperance Alliance of Louisiana estimates the cost of the liquor drank in that State as more than that of the entire cotton, sugar and rice crops.

It is no wonder then that intemperance has appeared among women. They drink wine, beer and spirits in Great Britain with a freedom that would be offensive in America, and even here it has been found necessary to establish asylums for inebriate women. In the city of New York fifty-six drunken women were taken to the Tombs on a single day in June, 1881. "In the jail in Brooklyn," said Rev. H. W. Beecher in June, 1881, "there used to be a room in which forty or fifty women were herded, with no chairs or benches, squatting like swine, sent up for ten or twenty or thirty days for drunkenness. At the end they were let out

like animals from a barn-yard, to go in the name of the devil."

That all this intemperance carries with it a corresponding increase of crime no one would deny. No student of the temperance question would admit that less than three fourths of our crime is due to intemperance. Four fifths is a more common estimate. But the great world movement to a lower plane of life—to crime and misery—does not depend entirely upon the flow of alcohol; on the contrary, the demand for alcohol is itself a consequence of the lower plane of life, a consequence of the moral degeneracy. Brutality demands alcohol, and alcohol feeds brutality, and hence they increase together, reciprocally cause and effect. This is illustrated by the statistics of the State of Maine under a prohibitory liquor law which is commonly called the Maine Law.

From 1851 to 1880 the population increased fourteen per cent or one seventh—from 587,680 to 648,945. During this period, in spite of temperance laws (enacted in 1852), churches and New England education, the number of crimes has tripled—the State Prison convicts, 87 in 1851, were 267 in 1880. The high crimes of murder, murderous assault, arson, rape, robbery and piracy increased from 14 to 67. Divorce, insanity, and suicide have also largely increased during this period. And these evils arise among the native population enjoying the benefits of common schools and temperance laws, which have very largely reduced the consumption of liquor—four fifths of the convicts in the State Prison being natives. This degeneracy has been in progress sixty years; during the twenty years from 1820 to 1840 "only two convictions of murder or arson are known to have occurred," says Judge Stoddard. Thus enforced temperance has failed as signally as the church and the school to arrest the downward tendency.

What is the lesson to be learned by sociology from such facts? What is their explanation?

There are four prominent causes. The whole civilized world has been gradually leaving the country and crowding into the large cities, in which the race de-

generates so rapidly that if it were not for the health and vigor of the country the population of the civilized nations would actually decline, the deaths exceeding the births. (In February, 1882, the city of New York had 2126 births and 3297 deaths, according to its official reports.) It is not necessary to array the statistics and look at the ghastly details of physical and moral degeneracy in city life, which are undisputed and are familiar to those who have attended to the subject. With all their polish and intellectuality great cities are known to be great ulcers, and their intellectuality has no more power to save them than sunshine has to prevent putrefaction. The agricultural population, who form 53 per cent of the entire population in France, commit but 30 per cent of the crimes. The education of Massachusetts has not saved it. The State reports confess that atrocious crimes are common.

The second cause is the conscription of the entire population for military service—the army, being a rebellion against Divine law, a school of pessimism that debases the moral nature, and, like a malignant tumor, absorbs the life-blood of the nation, driving the poor by exhausting taxation into pauperism and prostitution, while the army itself, by its low moral and physiological status, adds greatly to the sum total of disease, insanity, suicide, and death. The year 1881 recorded 273 suicides in the Prussian army.

The third cause is the industrial ignorance of laborers, which disqualifies them for profitable employments and perpetuates their poverty by the enormous competition of hungry, unskilled laborers.

The fourth cause is the selfish competition and gambling commerce in which capital in a few skilful hands grows with magical rapidity by dividends, monopolies and speculation, while labor unenlightened must struggle despairingly (as it is in excess) for a bare subsistence, thus establishing a permanent oligarchy and a suffering and therefore turbulent or criminal proletariat more and more crushed from year to year by tyrannical taxation resulting from wars and profligacy

of expenditure. Even in republican France (supposed to be the most prosperous country of Europe) the annual budget has risen at present to $606,000,000 (according to M. Leroy Beaulieu) exclusive of local taxation. Thus the governmental burden amounts to about one hundred dollars per capita upon all the adult males who can be accounted efficient producers! A financial slavery!

A fifth cause may be found in the unhealthy condition of cities, reeking with the accumulated filth of centuries (which has penetrated the entire soil), pestilential in the foul, dark, crowded tenements of the poor, fed scantily upon food largely adulterated. In May, 1881, the Paris Municipal Council reported, as the result of the examinations of food sold in shops, that of 231 samples of wine only six were good and 184 were absolutely condemned; four fifths of the samples of milk were condemned, and one fourth of the samples of bread and pastry.

The deep underlying cause of all is found in the organization of society and all its institutions upon a basis of pure and intense selfishness instead of the principles of Christianity taught by Jesus. Life is altogether a desperate competitive struggle—a struggle to grasp, monopolize, and indirectly enslave. The private monopoly of the soil alone (which is the property of the nation) establishes a permanent cancer upon the social system—a tax, according to the rates of English rental, of about $6400 per annum to every square mile, and in large cities upon each quarter acre of central ground—which labor must pay to hands that need not labor, to foster luxury and selfishness and to widen the gulf between classes by depressing the lower class. This mighty social wrong, which I exposed in essays on "The Land and the People" thirty-five years ago, is just beginning to be seriously considered by economists and statesmen, and the remedy I then proposed is now calmly considered by the best thinkers.

For none of these great evils does our common education offer or suggest any remedy. It develops no high principle, it undermines more than it assists

religion, it harmonizes with selfish ostentation and ambition, it increases the separation and alienation of classes, it aggravates discontent with the existing social order, it stimulates wild pessimistic speculations, furnishes selfish intellect to journalism and politics, and incendiary leadership to discontented masses. "The liberal professions," says Royce, "composing 22 per cent of the entire population, form 4 per cent of the criminals in France—an extraordinary statement, if correct.

The true full-orbed education of the moral and industrial faculties annihilates intemperance and vice, assures the prosperity of all, places the humblest laborer in the path that leads to comfort, intelligence, and happiness, destroys the social alienation of classes and the consequent jealousies, forbids all future turbulence and convulsion, elevates women above the sphere of prostitution, restores integrity to governmental affairs, empties prisons and almshouses, unites industrial pursuits in co-operative and profitable systems of stability, spreads religion through all classes, establishes the ideal republic, and prepares for the advent of the Kingdom of Heaven by removing every obstacle.

Decline in Virtue.—Crime (according to Potter) has increased fivetold in England and Wales from 1800 to 1850, over sevenfold in Scotland, and over twelvefold in Ireland, while the population has hardly increased 80 per cent.

In Holland, France and Norway a great increase of crime has occurred, and incendiarism has especially increased in France, in Paris, and in London. According to M. Joseph Reinach in a work on crime, more than half the persons arrested for crimes in Paris are minors, and there has been a very great increase since 1878.

In the United States crime outruns population, as we had

	Population.	Convicts in State Prisons.
In 1850	19,553,668	5,646
" 1860	26,922,537	19,086
" 1870	33,589,377	32,901

The increase cannot be ascribed to immigration, but is due mainly to the native American enjoying the advantages of common schools. The increase of native American convicts from 1860 to 1870 was from 10,143 to 24,173. In the city of New York the repression of crime costs more than education. Police and judiciary salaries amount to $4,736,553, educational salaries to $2,769,168.

In Massachusetts, which is often held up as a model of educational progress, the amount of crime is much above the general average of the United States, and the number of insane, idiotic, deaf and dumb in 1876 was 16,513. Of the convicts in that year only 11 per cent were illiterate. The progressive increase of poverty was shown by the increase of objects of State charity from 29,066 in 1872 to 82,997 in 1877.

In Maine, which has had not only the New England system of common schools, but that maximum result of the religious and educational system of that State—the "Maine law" of prohibition against all use of alcoholic liquids—there has been a remarkable increase of crime from 1851 to 1880, a period during which the prohibition law was in force. The State Prison had but 87 prisoners in 1851, yet in 1880 there were 267; during this threefold increase of crime the population increased less than one eighth (11.27 per cent). The prisoners for homicidal crimes were in 1851 but 8; in 1880, 33.

Illegitimacy is continually increasing, embracing about one seventh of the births in European cities. While increasing in America, "seven hundred thousand illegitimate children says Royce, "are annually born in Christian Europe." Stockholm in one year had as many illegitimate as legitimate births. About two per cent of the population of large cities are suffering under the blighting poison of venereal disease. Statistics show its great increase in this century in France, Germany, Austria, Denmark and Great Britain, and hospital reports in New York exhibit a progressive increase. Thirty per cent of the entire British army was afflicted with this disease in 1860. The

prevalence of this blasting disease fosters every species of moral deterioration.

Parallel to all this increase of crime and corruption is the decline of religious sentiment, patriotism and honor. The corruptions of the Federal government, the near approach of parties to civil war in 1877, the terrible riot and arson at Pittsburg, and the fierce propaganda of incendiary principles among laborers and social reformers are danger-signals of the volcanic elements at the foundation of society, the dangerous elements which develop in the sphere of selfishness as fever develops in the sphere of malaria. "He who studies the movement of American society," said Rev. M. Harbison, at Washington city, "cannot fail to see that we are under a reign of selfishness in striking contrast to forty years ago."

Religion is declining; an eclipse of faith is visibly begun, and a "moral interregnum" is anticipated by many. Money is not lacking, but zeal and faith. England alone has spent $180,000,000 this century in building churches. Agnosticism is spreading silently in the pulpit, not by the growth of more rational faith, but by the decline of all faith. The army of physical scientists are constructing an iron-clad system which excludes every religious conception. They hold the majority of colleges; and the very existence of life as anything but a *phenomenon* of physical forces is peremptorily ignored in leading scientific associations without a word of dissent from scientists or of remonstrance from the pulpit or from journalism. The hostile flag of materialism is thus quietly planted on the ramparts, and waves undisturbed.

Protestantism has not only paralyzed the papal arm, but become paralyzed itself through a large part of its area. Eighteen hundred and twenty Presbyterian churches gained not a convert in 1879, which means that they are falling behind the progress of population, and the Congregational churches are little better. It is not because men are recoiling from the dogmas of orthodoxy to more attractive forms of religion, for the liberal or non-evangelical denominations are stag-

nant also. Extreme wealth and luxury, extreme poverty, heartless education encouraging idleness, and wide-spread physical degeneracy, and social misery, indicated by divorce, prostitution and suicide, have superseded the moral manhood that aspires to a diviner life. The prospect is gloomy, and the darkest period has not yet arrived, but I am well assured that uplifting energies have been arranged by the Divine wisdom, the grand results of which will appear two centuries hence, by which time the fruits of moral education will be realized, but among the most enlightened they will begin to appear before this century ends.

All true philanthropists and deep thinkers take substantially similar views to those here presented of our existing degradation and future delivery by education, co-operation, and practical religion.

An enlightened philanthropist (whose name I have lost), after protracted investigation of the social question, presented his views to one of the most liberal of the English peers, in a letter from which I quote the following. After pointing out the existing evils—1. Lack of good family homes; 2. Lack of wholesome cheap food; 3. Lack of leisure for social duties, recreation and instruction; 4. Lack of good local government; 5. Lack of industrial instruction to make skilled workmen; 6. Lack of parks and other institutions for innocent recreation; 7. Lack of organization of the public service for the common good—he proceeds :

"The first great danger I see in England lies in the wide-spread growing poverty and demoralization of the poor.

"The second lies in the growing deterioration of the breed of English men, women, and children, who are being reared in the lanes, alleys, and filth of our wealth-growing towns.

"Next, in the higher class of our skilled workmen I find a fixed antagonism to the wealthy, middle, and mercantile classes of which they are the tools and the victims.

"Lately, I find the aristocracy of England, which has so long maintained its standard socially and intellectually higher than that of the aristocracy of other countries—I say I regret to find that aristocracy ceasing to occupy itself with the direction, government, and well-being of the people of England, who would be only too

glad to be instructed, guided, and ruled by educated and well-bred men, instead of being ruled by the classes whose interests are directly antagonistic equally to the cultivators of the land and the skilled workmen.

"I am satisfied that these feelings, little expressed, are widely and strongly felt. I am sure that the workingmen are gradually tending to some great social revolution, and I think it has been brought much nearer by the present war of irresponsible sovereigns.

"The practical question I now think is merely whether the great social changes which are necessary and inevitable shall now take place by means of a large and friendly organization of the educated, wise, and refined men who form the English aristocracy with the able, skilled, uneducated, but well-meaning workingmen who form the bone and sinew of the English nation.

"In that case we may expect the revolution to be wise, gentle, rapid, and peaceful. If, on the contrary, it is let alone, it will be an explosion from below."

All that he says of England is true in a minor degree of America. Our degeneracy has already brought us to the verge of social convulsions, and our crime-infested cities are continually in danger of the supremacy of the mob, which will readily find shrewd and intelligent leaders.

In our great educational crisis I see no escape but moral education.

We have looked at the increasing darkness, but not at the dawning lights. Education in its first ameliorations has been beneficial only to the intellect—it is going to be beneficial to the moral nature, to the development of woman, and the elevation of labor. Religion in its first decline before advancing science is losing its dogmatic power, but the free thought which at first seems fatal will ultimately be its salvation when free thought and faith unite in establishing scientific and philosophic religion. While the Church is losing in power, fashion and numbers, it is gaining in sincerity and spirituality. The corrupt Church of England is to be disestablished and thereby purified. Fifty years ago its pastorates were mostly corrupt sinecures, the majority of the clergy being non-residents; now the non-residents are but one in seven. The luxurious fox-hunting, wine and brandy tippling idlers who draw their salaries at a distance from their

parishes are superseded mostly by a working clergy. Fifty years more will work still greater changes for the better.

The laborers who have suffered so long in helplessness are compelled to think and combine by suffering. The Rochdale system of co-operation in England, and the co-operative banks established by workingmen in Germany, are gradually preparing a better social condition, the ideal of which has been almost attained in the Industrial Palace, the Familistere of M. Godin, at Guise, in France. The proper treatment of criminals and the insane is becoming understood and acted on, and medical science is rapidly becoming ameliorated and liberalized, while developing hygienic laws and sanitary measures to sustain the public health.

The victims of oppression are making their escape in increasing numbers to the American continent, and sending back moral power to aid in peaceful revolution, the establishment of the Confederate Republic of European nations; while through a myriad of unseen agencies an overruling guardian Providence is conducting us through a cloudy period of human destiny to the age of true civilization and social harmony.

The art of healing is advancing more rapidly than ever. Anthropology is now an organized and demonstrated science; barbarian amusements are repressed; spirituality and refinement are increasing, and the industrial arts are multiplying wealth, diminishing the necessity of labor and making universal comfort possible when avaricious monopoly shall be checked.

The gloomy statistics of national degeneracy would be discouraging indeed if we could not discover so many counteracting influences and elements of social progress. These we find in the increasing enlightenment of all classes, the steady progress of numerous philanthropies in temperance, charity and education, the accumulating funds of benevolent and educational institutions, the increasing amount of skilled labor and the educational institutions devoted to the practical arts, the increasing enlightenment and energy of the oppressed classes, demanding more and more of

liberty and justice, more and more of democratic institutions, their discovery that despotism and war are their enemies and that priestcraft had perverted religion, the vast improvement in all productive arts, the increasing efficiency of labor, and the steady accumulation of wealth which outruns the growth of population and falsifies the doctrines of Malthus—this wealth being continually more beneficial because more equally distributed, and this producing a greater diffusion of comfort in society.

The facts which illustrate this economical progress in Great Britain and France during the past forty years have been collected by Mr. M. G. Mulhall from authentic statistics.

The increase of aggregate wealth in the past forty years is indeed marvellous and beyond precedent. In Scotland and Ireland the wealth to-day is about three times as great per capita as it was forty years ago—more than three times in Scotland and less in Ireland. In France also the increase during forty years is estimated at threefold. This wealth being more equally diffused there has been a great increase also of the depositors in savings banks. In France during forty years since 1840 the number of savings-bank depositors has increased twelvefold (from 311,000 to 3,850,000), and the aggregate amount of the deposits has increased from $34,000,000 to $256,000,000. An astonishing proof of this diffusion of wealth was the readiness of the people to lend to the government in 1872, when there were 934,000 French subscribers to the government loan!

During this period of financial progress the average wealth of the working class in Great Britain and Ireland has very nearly doubled, and their enjoyment of the comforts of life has also increased. The consumption of meat, flour, sugar, and tea per capita has largely increased in Great Britain, and as this increase could not have occurred among the prosperous and well fed class it indicates a very great increase in the comforts of the poorer classes; the consumption of tea per capita having risen from 22 to 73 ounces, would indicate that three times as many are now able to indulge

in that drink as enjoyed it forty years ago. While the comforts of the poorer class have thus increased, the general improvement has diminished the number of that class in the United Kingdom and increased the numbers of the middle class and the wealthy.

We may therefore cherish the hope that the nadir of physical and moral degeneracy has been reached, and that with increased comfort, increased equality and justice, a rational system of education will make the upward progress of society more rapid than its degeneracy has been.

CHAPTER XII.

VENTILATION AND HEALTH.

Health a positive condition, an abundance and strength in all our powers, physical, mental, and moral.—Ill-health brings failure in the weaker powers, and these are very often the moral. —Ventilation has great control over health.—Shameful neglect of ventilation.—Prevalence of pulmonary diseases.—Atmospheric impurities affect other organs more than the lungs. —Effect of a negative atmosphere on lungs.—Effects of evaporation, condensation, rain, and dew.—Effects of freezing and thawing on the atmosphere.—Benefits of sunshine, vegetation, and ozone.—Effects of dryness and of watery vapor.—Pulmonary disease mostly based on pulmonary irritation, or "catching cold."—Colds not explained by medical science.—How produced by draughts of cold air in warm apartments.—Effects of draughts through cracks.—Effects of dampness of floors and walls.—Effects of negative air from cellars and wet surfaces.—Different effects of fire-places and stoves as to crack-blowing. —Explanation of negative and positive states of the atmosphere.—The open fire-place an efficient ventilator.—How to prevent the cause of colds by warm-air pipes.—Evils of excessive ventilation.—The proper use of ventiducts for ventilation. —All such ventilation imperfect.—The impure air should be removed.—Quantity of air moved in ventilation.—Distal ventilation inefficient.—PROXIMATE VENTILATION the only proper method.—Plan of construction explained.—Difference of ventilation in summer and winter.—Application to churches, theatres, schools and hospitals.—Other means of purification by disinfection.—Cooling by ice in hot weather.—Happy condition of ventilated, flower-surrounded halls, full of music and gayety.—Song and sentiment extending through all education and all subsequent life.

HEALTH is a positive condition. It is not merely the absence of disease, but a normal operation of the entire apparatus of body and soul, marked by activity, buoyancy, efficiency, happiness, and power to resist all disturbing, depressing, and morbific influences. A dull, monotonous, and uninteresting life may be free from organic disease, but it is not a life of health.

The moody and indolent savage has not the health of the white man, for health is the sum total of vital activities, which is moderate in the savage. It is the sum total of the moral, intellectual, passional, visceral, and muscular life, and attains its perfection as these are fully developed and harmoniously balanced.

A failure or diminution of health, therefore, is a reduction of some of the physical, intellectual, and moral faculties below their normal power and activity. The failure or decline of health necessarily affects first the weaker faculties, or those which have been overtaxed and exhausted. It may be a failure in the stomach (dyspepsia and loss of appetite), or failure in liver or bowels, or in the muscular energy and activity; or in the external senses, the executive ambitions, the memory and understanding, the social tendencies, the firmness and self-control, the cheerful spirits, the affections, or the moral and religious sense of duty.

Whichever of these powers may be constitutionally weak is liable to decline or to fail essentially as health declines. In the majority of mankind the moral faculties are first to show the decline when any depressing or deranging influence is at work. The individual becomes indifferent to his social relations and incapable or unwilling to make himself agreeable in society. He loses interest in all his duties, becomes indolent, gloomy, and irritable. He loses interest in his studies and pursuits, loses hope and ambition, and lives on a lower plane of life. Even the illustrious Carlyle could not resist the moroseness produced by ill-health.

This moral decline may or may not be accompanied by a variety of physical ailments. In delicate persons, girls, and young ladies we often see the decline indicated in the loss of strength, loss of appetite, and nervous derangement, while the moral nature remains unimpaired. When the moral nature is very strong we are delighted to observe all the charms of a high moral nature unimpaired by physical suffering. But more frequently we observe the opposite, for a majority alike of children and adults manifest their decline of health first in the moral and intellectual nature.

Hence the paramount importance of hygiene in moral education, health being to many the necessary condition of amiability, and the necessity of presenting a practical view of that portion of hygiene most easily controlled, which relates to the school-room and which bears directly on the intellect and spirits, depressing or exalting all the vital energies. The preservation of a healthful atmosphere by ventilation is so easy if rightly understood, and so generally neglected from ignorance,* as to render a chapter on this subject necessary.

Ventilation—the providing of perfectly wholesome air for human beings to breathe who live in houses is a matter entirely free from mystery or difficulty, excepting the mystery and difficulty which arise from ignorance. It depends on a few simple mechanical principles, and, rightly understood, it is cheap as well

* The indifference and ignorance on this subject seem to be almost universal. A millionaire of Brooklyn (Mr. R.), inhabiting a costly mansion supposed to be faultless in every respect, believed to be especially good in its plumbing construction, nevertheless fell a victim to sewer-gas after it had developed four cases of scarlatina and diphtheria in the house. His own attack was scarlet fever. The President of the Health Board once expressed the opinion that half the houses in New York City were unfit for residence on account of impure gases.

It is no better in Europe. Mr. Rawlinson, the eminent engineer at the Exeter Sanitary Congress, spoke of the foulness of the great government offices and official residences in Downing Street. The drainage of Somerset House he pronounced so "indescribably foul" that he would rather resign than live there, and the War Office was "fouler than any common beggars' lodging-house." "Society will be horrified to learn," said a London newspaper, "that Mr. Rawlinson considers Belgravia to be the worst part of London so far as sewage goes. This is really a scandalous state of matters."

The condition is no better in Paris. The famous astronomer Leverrier had to make complaint of the wretched ventilation at what is supposed to be the very head-quarters of modern science—the hall of the French Academy of Sciences of the National Institute.

Even buildings of recent erection under the supervision of eminent architects are sometimes found unfit for habitation, as in the case of the palace of the Duke of Connaught at Bagshot Park, which, according to Dr. Playfair, was dangerous to the life of any who might inhabit it.

as simple, and there is no reason why every edifice in our country should not have perfect ventilation. Every architect should understand this subject perfectly, and the exposition given in this chapter will be a sufficient guide for architects.

Yet we have many reports of badly ventilated halls and school-rooms which are sources of disease, and even our National Capitol, where large expenses were encountered and expensive apparatus provided for ventilation, has been in a condition positively disgraceful. A correspondent of the *Courier-Journal* recently (Dec. 6, 1876) said :

"Upon first entering the Hall of Representatives it appeared dark and gloomy; the air was already so vitiated that it assumed the form of a mist that settled between the floor and galleries. The heat was overpowering. Never before were there such illy-constructed chambers as those of the Senate and House of Representatives. Both are in the centre of the wings of the Capitol, without a window or any opening for fresh air. Both are death-traps, and every year several valuable lives are sacrificed to the ignorant architect who contrived chambers only fit for cremation. They are admirably adapted to that purpose, only one must first undergo the tortures of asphyxia."

An intelligent gentleman of my acquaintance remarked after visiting the Capitol that it reminded him of a hog-pen. Such language is too strong, but certainly the ignorance displayed in the Capitol is remarkable. The universal neglect of physical science in education heretofore—the universal neglect especially of hygiene—costs our country millions of money and thousands of lives annually. The condition of the Kentucky Penitentiary has been a discredit to the State, showing a large loss of life from its crowded and ill-ventilated condition ; and I have heard of parents compelled to withdraw their children from our public schools on account of their dangerous condition as to ventilation. I have often found in bed-chambers of respectable families and in hospitals well endowed an atmosphere more unwholesome than that of a good stable; and I have still more frequently

found sitting-rooms and bed-rooms dangerous to health and life from draughts of cold air.*

* In New York there have been many gross violations of hygiene in schools. For example, in grammar school No. 20, in Chrystie Street, of which the N. Y. *Tribune* said:

"The air of the room was damp and foul—from the rear came very bad odors. There are fifty-four children under the care of Miss Husted, who are from six to eight years old. The teacher is herself suffering from malaria, and says she keeps herself at work until vacation only by a liberal use of quinine. She said that the inspection by an officer of the Board of Health a year ago, who pronounced the building all right, was made at a time when the rooms in the rear had been cleaned and the place well aired. Last summer it was necessary to go out of the room every fifteen minutes to get the fresh air. On a very warm day in May the class was taken out in the yard in the open air as the atmosphere of the room was intolerable. When the reporter visited it the door was open for ventilation, producing a disagreeable draught, and the windows facing the recently infected house were nearly closed. Very little air entered apparently from the windows on the opposite side of the room, as they were shut off from a free circulation by a high wall."

"Not one public school-house in New York City that is adequately supplied with fresh air; not one that is not twice as unhealthy as it would be if even the existing imperfect means of ventilation were properly utilized! So reports Dr. Endeman to the Board of Health. Do New York fathers and mothers realize what this means?"—*N. Y. Sun.*

"Dr. Endeman, chemist to the Board of Health, reported at the meeting of the Board yesterday that the results of his examination of the air in the public schools did not differ from those obtained by him in 1872 and 1873. In none of these schools, he says, did he find adequate means of ventilation. The appliances for ventilation are best in the school in West Fifty-eighth Street, but they are not often used on account of exposing the children to draughts. The window affords, in almost every case, the sole means of ventilation, and even here free passage of air is obstructed by appliances for keeping out the sunlight."

"Dr. J. R. Black, writing in the *Sanitarian*, says: 'There is scarcely a public building in any of the States, whether it be State-house, court-house, public hall, school-house, church, or asylum, that is constructed in accordance with the strict requirements of hygiene;' and we will add to this that the latest and most imposing medical college built in the city of New York, in 1875, supposed to be a model institution of its kind, was provided with but one lecture-room, capable of seating 500 students, and with two small windows, one insufficient door of exit for the audience, and absolutely no visible means of ventilation. Yet the room is

Having myself inherited very delicate lungs I have had especial reason for studying this subject, and I have in consequence arrived at a simple and practical

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occupied to its fullest capacity during the college session during four hours in succession each morning, and also a few hours during the afternoon. Here earnest medical students endeavor to gain a knowledge of disease, its cause, and how to cure it, while their blood is being poisoned by the breathing of foul air and their brains are made sluggish by the want of sufficient oxygen. Competent authorities have decided that every person should have 3000 cubic feet of fresh air to breathe each hour. And since the air of a room cannot be changed by the best methods of ventilation oftener than three times an hour without subjecting the occupants to draughts, all hospital-wards, sick-rooms, and halls for public meetings should have at least 1000 cubic feet capacity for each individual occupant."—*Health Monthly.*

"We have the report of the visiting committee of the public hospitals. The ventilation of Bellevue Hospital, the committee say, is, and must always be, bad; the air cannot be kept pure in such a labyrinth of passages and wards; but the erection of ventilating towers outside the walls is suggested. The Pavilion Hospital on Hart's Island is ventilated by opening the windows; there are ventilators along the ridge of the roof, but they are boxed up in winter, and, therefore, in stormy weather it is difficult to keep the wards warm and let in fresh air at the same time. The ventilation of large public institutions, like schools, hospitals, and courts, has attracted attention lately. Children, patients, and judges and jurors have felt the effect of impure air, and complaint after complaint has been made, but, excepting in the court-rooms, little has been done to get proper ventilation. Perhaps the committee inspecting the public schools may find a remedy that can be applied to the hospitals."—*Sun.*

"A mining engineer, writing to the London *Times* about the inadequate ventilation of the Metropolitan Underground Railway, says that while travelling on that line recently he became almost suffocated by the poisonous atmosphere, and had to be assisted out of the train before reaching his destination. On applying at a druggist's for a restorative the latter instantly exclaimed: 'Oh, I see, Metropolitan Railway,' and at once poured out a wine glass of a peculiar fluid, which produced the desired effect. When asked whether he often had such cases, he replied: 'Why, bless you, sir, we have often twenty cases a day.' This is denounced as a disgraceful state of affairs, in view of the fact that the roads can easily be ventilated by the erection of large fans."—*Sun.*

"The following resolution recently adopted by the Bar Association was yesterday received by President Chandler, of the Board of Health:

"'That the Board of Health and the Commissioner of Public

system of ventilation which I believe is essentially new, and for which I could have obtained a patent right if so disposed, and perhaps ought to have done

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Works are requested to examine into the defective ventilation and heating in the Court-house of the city of New York and the best way of remedying the same, and to give this committee an opportunity to confer with them on the subject.'

"It is doubtful whether the tribunal which the Bar Association here invokes in the matter has jurisdiction over it. But it is clear that some authority should at once interfere to save all the judges, many of the bar, and a large number of witnesses and jurors from some of these Calcutta Black Holes which are denominated court-rooms. Already Judge Robinson has fallen a victim to the poisoned atmosphere he breathed for years without a murmur, and Chief-Justice Davis has recently been at the very portals of death from the same cause. Justices Speir and Sanford, of the Superior Court, are well known to be more or less suffering from the same cause. The atmosphere of the Sessions Court could not ordinarily be savory in any building; but in its present quarters this atmosphere is at times positively nauseating. Recorder Hackett succumbed to it after twelve years of its breathing, and Judge Gildersleeve has nearly died with the poison which affected his throat and lungs. Probably when a few more judges die the Court-house Commissioners will be empowered by the Legislature to adopt some sanitary reforms in ventilating the court-rooms, which may result in preserving the lives of the remaining judges."—*World.*

"Speaking of Judge Robinson's lingering illness, Judge Daly had no doubt whatever that he had fallen a victim to the foul atmosphere of the badly-ventilated Court-house. 'Judge Monell was killed in the same way,' said he, 'and Judges Curtis and Sanford, of the Superior Court, and Chief-Justice Davis, of the Supreme Court, are all laid up at present from the same cause. As for myself, I am not well either. I have stood the wretched atmosphere for a good many years, and may stand it for some time to come. Judge Robinson left the city a year ago, broken down in health, and made a trip to San Francisco. The first time that he resumed his place on the bench after his return he fainted and had to be carried home. I think it is about time that the Board of Health took some action in regard to the dangerous condition of our Court-house. They pretend to have some system of ventilation, but I believe that, taking all things into account, our court-room is about the worst one in the world. In the old court-room, which we occupied in the City Hall before the new Court-house was built, I devised a simple plan of ventilation myself and got along very well. But where we are at present we have to stand the foul air till it becomes insufferable and then we pull down the windows and let the cold air sweep in over us, thus inviting one danger to take the place of another.'"—*Ib.*

so to facilitate its introduction. When people pay a handsome fee or royalty for anything they appreciate it more highly. But I have given it freely to the public.

Throughout this country, and we may say throughout the English-speaking population of the world, pulmonary diseases carry off from one tenth to one fourth of the entire people.

A large portion of this mortality is due to the scrofulous diathesis and to a lowered vitality—a deficiency of the red elements of the blood—which renders the individual liable to the albuminoid deposit called tubercle, which, taking place in the lungs, ends in pulmonary consumption when the tubercles soften.

The chief atmospheric cause of pulmonary consumption, or rather the sole cause in popular estimation, is the *impurity* of the atmosphere, caused by carbonic acid, animal exhalations, and filth. But in jail these causes operate more on other organs than the lungs. Carbonic acid causes a general lowering of vitality and depression of the nervous system; malarious emanations affect the liver, spleen, and alimentary canal; putrescent exhalations develop fevers; carburetted hydrogen produces softening of the brain and paralysis; sewer gas produces diphtheria and a variety of zymotic diseases.

Imperfect ventilation, therefore, affects other organs more than the lungs, but in all cases it produces a great impairment of health, and is alone sufficient to make a school destructive to the physical and moral constitution of the pupils.

But the most serious diseases of the lungs, aside from the localization of scrofula in tubercles, are due to other causes which operate locally, and which have almost escaped the attention of the medical profession —causes which directly depress the vitality of the lungs, and do not, like malaria, enter the blood and derange the nervous system. These causes are found in a cold, negative atmosphere—the source of colds, catarrhs, consumption, and pneumonia, according to the circumstances of the case—and they are often

brought into play with dangerous or fatal effect by the means adopted for procuring ventilation; for while society is well instructed in the effects of impure air on the general health, scarcely anything has been said of the effects of negative air upon the lungs.

By negative air I mean air deprived of the animating qualities derived from the sunshine, which is the immediate maintenance of all vegetable and animal life. Such air is found in underground habitations or cellars, and in the winds blowing over a large extent of country which is deficient in sunshine. On some days in the winter the atmosphere is so intensely negative from this cause as to produce an extreme depression not only of the lungs, but of all the powers of life in delicate persons who find it necessary to remain indoors, but cannot even by that means escape a depressive effect.

The positive and negative conditions of the atmosphere depend not only on the presence or absence of the sunshine, but on the conditions in which the effect of this presence or absence is intensified or accumulated. The presence of the sunshine develops vegetation and flowers, which add to its beneficent effects on the atmosphere, as its absence leaves them to die and decay, producing a large amount of malaria. The presence of the sunshine produces a large amount of evaporation, in which its imponderable forces are carried into the atmosphere in vapors and clouds, producing brilliant electric displays, and bringing a refreshing influence to plants as these vapors and clouds return in dew and rain. Expansion by evaporation absorbs all the sun brings and condensation of the vapors back to water liberates what had been absorbed.

Condensation still further, in freezing, liberates still more, and produces thereby a delightful effect on the atmosphere, which we realize on frosty mornings and whenever the cold, muddy surface of the earth is changed by a general freeze, or when the falling snow relieves the previous negative chilliness of the air which is so disagreeable to nervous, rheumatic persons.

When these processes are reversed and the imponderable elements absorbed the effect is depressing. The atmosphere in days when it is thawing is extremely disagreeable, and to stand or walk in the thawing mud and snow is very unwholesome to delicate persons. The March winds blowing over the thawing ice of our lakes or the icebergs of the Atlantic are quite unwholesome and unpleasant—an abundant cause of catarrhs and pulmonary affections.

Evaporation rapidly absorbs caloric and its associates, leaving a cold, negative condition, and if this evaporation proceeds in the absence of sunshine it produces a very negative condition. Hence all damp or wet places unrelieved by sunshine are injurious to the lungs, developing bronchial, consumptive, and asthmatic diseases.* A wet soil near a residence is especially injurious, and a frequent cause of rheumatic troubles. Damp cellars are dangerous habitations, and wet walls or floors are sure to affect the lungs of those who inhabit the apartments. In the open country the communication with a moving atmosphere warmed by the sun moderates these effects, but in closed apartments void of sunshine they become intense. Even in the open country, however, an intensely negative state may arise from the absence of sunshine

* The London *Telegraph* says that the great fog which lasted with few intermissions from November, 1879, to February, 1880, enormously increased the death rate. Asthma was especially increased in its fatality. When the fog was severe, in the middle of December, the deaths from asthma were increased 43 per cent above the average. When the fog abated, or nearly disappeared, in January, during three weeks the deaths by asthma fell to 30 per cent below the average. But when the fog returned *with increased density* at the last of January and first week of February, the deaths from asthma rose to 220 per cent above the average and fell again to a low figure when the fog disappeared. All other lung diseases were aggravated during the fog period, but none showed so marked an effect as asthma. Never was there a better experiment to show the deadly effect on the atmosphere of excluding sunlight. Houses and manufactories which greatly exclude the light are known to be unhealthy; but their effects are not so injurious to the lungs, because they obtain a healthy atmosphere from surrounding sunlit locations.

when there is no condensation in the form of rain, snow, or ice, and a steady evaporation from the soil.

Owing to these causes the air of close-shaded apartments never penetrated by the sun or ventilated is quite negative and unwholesome. It can be made tolerable only by free ventilation, drawing in a better air from sunshiny regions. But there is less need of fresh air in an apartment (not crowded) into which the sun shines freely, and school-rooms should always have a free exposure to the sun in seasons when the heat does not forbid. In addition to thus vitalizing the air and apartment, it should have the benefit of vegetation by potted plants or beds of plants and vines under the windows. The odors of mint, thyme, and sage, evergreens and eucalyptus * are especially beneficial by evolving ozone in the atmosphere which is destructive of malaria. A similar influence is exerted by a simple ozone apparatus, consisting of a stick of phosphorus suspended by a wire in a jar of water so as to be drawn out of the water in proportion as we wish to increase the generation of ozone and immersed in the water when we wish to check it. This may not be the best method of developing ozone, as it diffuses the oxydated phosphorus, but it is certainly beneficial in an impure atmosphere, though it may be objectionable if used too freely.

School-rooms should never be placed near any sources of malaria, and if such exist in the vicinity there might be a partial protection by surrounding the school-house with wholesome vegetation. The sunflower has a reputation as an antagonist to malaria, and the eucalyptus tree is still more effective. As malaria emanates from the soil and also settles upon the ground at night, the school-room should

* The groves of eucalyptus planted in 1868 in one of the most pestilential spots of Italy, the vicinity of the Fontane convent, near Rome, made it a healthy place in five years. Similar experiments have had similar results in Algeria, in Alsace and Lorraine. The eucalyptus becomes a large tree in five or six years. It is not adapted to northern climates, but might be preserved by a *sufficient* winter covering for its roots.

never be near the surface of the earth, but should have at least ten feet of elevation. Its best location is in the second or third story, thus avoiding that lower stratum of air which is so often in negative and malarious conditions. Where the soil around the schoolhouse is not paved or covered with grass it would be kept in a wholesome condition by sprinkling it with iron in the form of iron filings, iron rust, or scraps of old iron or copperas (which is the sulphate of iron). Iron in all forms is a great antiseptic.

Another precaution against an unwholesome atmosphere may be necessary in winter, when the external cold renders the air very dry by freezing. This dryness is injurious to the lungs, but in the open air the stimulating effect of a cold but positive atmosphere rouses the moistening secretions of the air passages and prevents injury. But when the general atmosphere is negative as well as dry the secretions are suppressed and the effect is very injurious. The unwholesome dryness of the external air is aggravated when it is warmed in the house, for air at 70° is relatively drier than at 20°; that is, it is farther from saturation with moisture, and has far greater evaporative and dessicative power. This excessive evaporation from the lungs is a depressing process to vitality, increasing the irritability and checking the secretions. Even the skin (as tested in cases of small-pox) is far more irritable in a dry atmosphere deprived of the soothing influences of moisture. Hence when the lungs or bronchial passages are inflamed nothing is more soothing than the free diffusion of watery vapor in the air. A boiling kettle giving off steam in the apartment will give relief when medicine cannot. Hence in cold, dry weather, especially if cloudy, a pan of water on the stove continually evaporating produces a most beneficent influence, and if it simmers gently will not produce too much moisture. The addition of sugar or liquorice to the water of the pan will render it still more soothing and pleasant. The sugar-houses of Louisiana have been favorite resorts for persons of diseased lungs when the boiling of the cane-juice was in progress.

These general conditions and causes are, however, rather the predisposing than the developing causes of pulmonary disease. The exciting cause is almost invariably an irritation developed by an atmospheric cause in the lungs, or a congestion of the lungs caused the impression of cold on the surface, driving the blood congestively inward when the vital forces are too feeble to resist the attack.

The development of this local irritation is generally called "catching a cold," and the severity of this process or its repetition lays the foundation for formidable diseases.

But what is "catching a cold"? I think we shall look in vain through our medical literature for any real explanation of this familiar occurrence, which is the foundation of much of our pulmonary pathology.

In my own experience, having delicate lungs, the mystery of "catching a cold" was provocative of investigation, and as it had not been explained I eagerly sought its conditions and causes.

I soon found that the influence of external cold had little to do with it unless locally applied, or unless the cold should be so overpowering as to cause congestion of the lungs and endanger pneumonia. But the petty irritation called a cold, which is sometimes aggravated into bronchitis or pneumonia, does not arise in that way. It is continually occurring to persons who have not the slightest idea how the cold was caught. I soon found by personal experience that it arose chiefly from draughts of cold negative air coming into a warmer apartment. If the subject were placed in the line of such a draught from a door or window he must be hardy if he escapes a cold, especially if it strikes his feet, legs, shoulders, arms, or back, or goes directly to his breathing organs.

The cold produced by the current striking the person extensively is easily understood by the deranging effect of cold in driving the circulation inwards. But a general application of cold to the surface is not the most efficient or most frequent cause. A current of cold air striking the legs, arms, shoulders, or upper

part of back is very certain to develop a cold in the lungs, according to those laws of nervous relation which constitute the science of Sarcognomy, which would be too extensive a theme for illustration at present. The cold produced by inhaling an atmosphere in which a streak of cold air is mixed with one of higher temperature is not so easily explained. This, however, is the fact established by my own experience. An atmosphere homogeneous as to its temperature and electrical conditions is essential to the health of the lungs, and every departure from this condition I have found to be dangerous. The crack which lets in a supply of cold air to the apartment in which I sit is so noxious in its effects that I cannot sit long without feeling it and knowing that I am being injured, no matter where the crack may be.

The open door or window produces no such effect. It must be a narrow passage to be truly dangerous. Hence the majority of apartments heated by open fires are very uncomfortable to my lungs—the smaller the apartment the more noxious, as in a large apartment the effect is more diffused and does not necessarily affect all parts of the room.

Either the inequality of temperature in the air as we inhale it produces an irritative impression on the lungs, as a similar inequality might affect the hand in handling solid bodies (and would probably cause inflammation or soreness), or the air passing through the crack is deteriorated and reduced to a more negative condition, which makes it depressive or irritative to the delicate pulmonary organs. Both suppositions are probably true.

Homogeneous impressions are necessary to health. If cold air strikes my legs I acquire a cold, but if my whole body had been surrounded by the same cold air no harm would have been done. Inequality is the cause of the mischief. This inequality is much more injurious to the delicate sensibilities of the lungs; hence the heterogeneous atmosphere produced by thin strata of cold air rushing into a warm apartment is just the kind of irritation which most promptly produces

a cold. At a sufficient distance from the crack by which the cold air enters no effect is felt, the air having become homogeneous.

I observed that if the narrow passage through which the air entered was damp or wet the effect was greatly aggravated; or if the air entered through a damp apartment with wet walls, or over a floor recently washed and not yet dry, the effect was very injurious and intolerable.

In this case, however, the irritative effect of blowing through a crack was not necessary to the mischief; a wet place on the wall or floor of the apartment or of the adjoining apartment through which the air entered was sufficient to produce a cold without any other agency. And although it did not produce a cold the reception of air from cellars or underground apartments produced a disagreeable, depressing effect on the lungs which satisfied me that it might in the end produce pulmonary consumption, which often occurs in underground apartments and in houses in which the cellar air enters the chambers—a view which I expressed in my essay on "Consumption and Architecture."

The noxious character of the air passing over surfaces reduced to a highly negative condition by long evaporation is a conspicuous fact. In the open air, the wet earth moist with rain, or the foliage of plants, has not so great an effect by evaporation, for it is in free communication with the inexhaustible sources of electric supply. Yet even in the open air wet evaporating spots are known to be productive of rheumatism and pulmonary diseases. But in a close apartment evaporation produces an intensely negative condition, which has a deadly effect upon the lungs. To sleep in an apartment in which clothing has been hung up to dry has endangered or destroyed many a life. But to sleep in an apartment which has recently been plastered is an experiment which is universally known to be dangerous to life. Not until some time after the walls have appeared to be perfectly dry would any prudent person occupy such a room, if the

architect would consent. To sleep in damp sheets is another dangerous operation, not only to the lungs, but to the nervous system, endangering rheumatism or fever.* If the floor or walls of an apartment are wet, the only safety is to open doors and windows when we occupy it and let the wind blow through. Damp apartments, damp floors or walls, damp clothing, and blowing cracks are thus the chief sources of pulmonary irritations and colds which are often dangerous, as well as rheumatisms. Underground apartments are therefore unwholesome and ought to be prohibited, for they are almost inevitably damp and negative. Dwellings in Louisville were formerly built with basements for servants, but experience showed that the doctor's bill was fearfully increased. The blowing cracks seem never to have been suspected of their deadly power, which is coëxtensive with the open fireplace—we might almost say coextensive with civilization and cold climates.

The stove is not so injurious in this way, because it consumes less air and causes a less active blowing crack; but as every bushel of coal requires at least 25,000 cubic feet of air for its combustion the fire which burns only a bushel a day drags 25,000 cubic feet of air through the cracks, and if burnt in an open fireplace, probably forty or fifty thousand feet. In an apartment twelve feet square and ten feet high this would change the whole air about thirty times, or in one of fifteen feet square about twenty times. The air of the room at 65° or 75° is thus continually mingled in winter with a large amount just entered at 20° to 30° —a mixture highly irritative to the lungs, even if the cold air coming in had not been rendered more negative and irritative by friction in the cracks as it entered.

I am inclined to believe that the friction of the crack

* Sleeping in damp sheets which have become highly negative by evaporation for hours is very different from resting in wet sheets just taken from the water and surrounded by blankets to restrain evaporation.

gives the negative and irritative character to the air, for it is highly irritative to the lungs, even when the person is too far from the crack to be much affected by its mere coldness. The whole apartment is unhealthily irritating to the lungs, and there is no escape from the mischief but in opening a door or window sufficiently wide to give free access of air and stop the friction. Hence it is well known that our primitive log cabins, the doors of which are seldom shut, and which admit air freely between the logs and under the clapboards, are healthier than many of our city houses. Hunters and soldiers who sleep in the open air under a tree or an open tent never take cold until they come back to civilized houses, which are generally crack-blowers. To put an end to this dangerous crack-blowing should be a leading object in every system of ventilation; but it seems to have been entirely overlooked, and in some plans of ventilation it is terribly aggravated—making the ventilation dangerous to the health of all who are subjected to it.

Rational ventilation should give us pure air, and air that is not injuriously negative. It should *abolish crack-blowing*, cold draughts, dust, stench, and accumulated exhalations from the body.

The existence of a highly deleterious atmospheric condition, which I call negative, and which is the chief external cause of pulmonary disease, has been regularly overlooked by medical authors. Exactly what this condition is I have not attempted to discover, but feel justified in applying the term negative, as it arises from the absence of sunshine and the absorption of caloric in evaporation and in thawing. That evaporation carries off electricity as well as caloric is shown by the experiment of throwing water into a heated crucible or on the coals of a chafing dish, in which case the steam arising is positive. The vapors rising from the earth carry off so much as to cause the vast accumulation in the clouds which is discharged in lightning.

The condensation of vapor to rain, and of water to ice, emancipates this caloric and electricity, and hence the

polar regions which condense and freeze, but never thaw, have the vast accumulation displayed in the aurora borealis.

To overcome the evils described would be proper ventilation, and there is but one perfect system of ventilation—that which removes all the foul air and supplies a pure positive air in its place, homogeneous with that of the apartment.

The open fireplace is an efficient ventilator. It carries off the air rapidly, and chiefly the colder air which is in the lower strata. But this ventilation necessitates the entrance of cold air, which comes in rapid currents through every crack and keyhole, endangering the health of every one whom they strike or who inhales them before they are well mixed with the warm air. Generally there is a crack under the door and a rapid stream of cold air blowing along the floor, chilling the feet and ankles and raising the dust off the carpet. The ventilation by the fireplace is generally sufficient in amount, but it is dangerous to the inmates who are near the doors and windows, for streams of cold air blowing into a warm room *will* produce colds, or at least keep up a morbidly irritable condition of the lungs, which lays the foundation for consumption, bronchitis, or pneumonia.

If, however, all these openings are carefully closed—paper pasted over the cracks and rubber strips applied to the doors—air must be received in some way, the 30,000 feet must be forced in, and if the room is too tightly sealed the little cracks must blow in so much the faster, or else the smoke is not carried off and the room is full of carbonic acid. As air must be supplied, the best way is to have a pipe of sheet-iron or thin cast-iron, or, better still, copper, through which the pure air may enter, placed in the chimney so as to keep it hot and heat the incoming air, which should enter back of the fire, ascend, and be discharged close to the ceiling, thus filling the upper part of the room with fresh air while the impure is drawn off below. This pipe or these pipes (for there may be several) should be of a flattened or elliptic form, and coming

in from without should enter above the fire and pass up the chimney to the height of the ceiling, where they discharge their pure warm air. This arrangement is cheap and secures a good draught through the air-pipes. It would be better, however, to have the outside pipe extend up some distance to get purer air if it does not open near the mouth of the chimney. Another important improvement is to have it draw its supply of air through a box in which are from five to ten diaphragms of netting to intercept all the dust of the atmosphere, and thus not only keep our lungs clean, but keep a vast amount of dirt from our faces and hands, clothes, books and papers, and keep off the dust that settles on the floor, which is continually swept up and shaken up into the air to be breathed over and over. A ventilating company in England uses wool or cotton for this purpose. A still better plan is to fill the box or pipe with charcoal, and in unhealthy seasons with disinfectants. A single pipe one by twelve inches, with the draught of a good chimney thirty feet high, and a fire sufficient for such an apartment, would supply an ample amount of air for an apartment with forty or fifty persons, without exposing them to any cold draughts whatever, thus preventing the catching of colds and giving an equable temperature to the whole apartment, except immediately at the windows, besides effecting a considerable economy of fuel in saving much of the heat of the smoke in the chimney, so as to render an open grate almost as economical and as cheap as a stove.*

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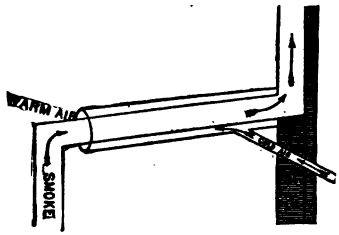
* A steam or gas-pipe two inches in diameter would be sufficient to furnish warm air to ordinary apartments, and one of three inches to apartments of larger size. I make this suggestion with a view to economy and simplicity of construction. The pipe should ascend behind the grate, in the open flue, and the builder should leave a three-inch space in the front wall of the flue free from bricks, filled with mortar, through which the pipe might be inserted and removed in case it needed any repair or cleaning. Such a pipe would answer the purpose of safe ventilation, but would not bring in as warm air as the one above mentioned.

Since the above was written an improvement has been introduced by the "Open Stove Ventilating Company," which may be seen

The same object may be accomplished in a less scientific and economical manner, whether we use a fireplace or a stove, by simply making a few small openings near the ceiling, such as narrow slits a foot long (or even gimlet holes, if sufficiently numerous), which should be directed upwards so as to have the air strike the ceiling and mingle with the warmest air of the apartment, which will be found above the stove and stove pipe or near the chimney flue. The mixture would become homogeneous before it reached the lungs of the inmates, especially if these openings were above the stove.

The same purpose may also be attained by causing a fresh-air pipe to be brought in so as to play against the stove or stove pipe, or through a shield incasing them, which would perfectly prevent cold draughts and procure some additional economy of fuel.



These methods are cheap and effective when the draught of the stove or fireplace carries a sufficient amount of air, but they do not constitute *a perfect* ventilation, although good enough to satisfy most persons, and prevent any condition that would be considered offensive or unwholesome except in a very crowded apartment.

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at 78 Beekman Street, New York, called a "portable air warming grate." It differs from the ordinary grate by an arrangement for introducing fresh air which is heated behind the grate and enters the apartment above the grate, thus solving *very* satisfactorily the problem of supplying abundant fresh air in a comfortable and healthful condition. The same principle has been successfully applied by the company to stoves.

When, in addition to this natural ventilation by the power of the chimney, we provide special ventilating flues or ventiducts, we do not always accomplish anything better.

Too much ventilation is as dangerous and injurious as too little, sometimes much more injurious, and many persons who are not sufficiently sensitive or observant to realize the effects of cold draughts do a great deal of mischief by indulging a passion for ventilation. It is very common for such persons in a railroad car to open wide a window and inflict a cold draught upon those sitting behind them when there is no occasion whatever for such an act of rudeness. It is often dangerous for a person of delicate health to travel in a car in winter, as, on account of this reckless propensity, a comfortable and regular temperature cannot be maintained.

I recollect entering a fashionable hall in the interior of the State of New York, the owner of which had once been a lecturer on physiology, and having the usual loose exaggerated notions about the importance of ventilation, his building was so flooded with currents of cold air as to make it unsafe for any one not pretty hardy to sit in it for an evening. After trying several times to find a safe and wholesome position in it I was obliged to give up visiting it entirely. A distinguished English lecturer having occupied it I asked his experience, and he poured out a bitter denunciation of the too well-ventilated hall.*

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* We have reached that period of the year when it is scarcely an exaggeration to say that the unreasoning stupidity of those who control places of entertainment of all kinds is sending many people to their graves. On Monday, say, the thermometer happens to reach 90°; so everything in the shape of door or window is very properly thrown open. On Tuesday the mercury goes no higher than 80°; on Wednesday it falls at the same hour to 65°; but, nevertheless, in many places door and window remain precisely as on Monday. Indeed, instances might be cited in which movable skylights, rolled off at a temperature of 90°, remained in that plight at 60°. No wonder, then, that we hear of shockingly rapid deaths by pneumonia. A few days ago a gentleman who did not desire to commit suicide left a large restaurant, where he had intended to

The sciolism which demands an excessive introduction of cold air into apartments, and supposes that an adult with 500 cubic feet of air would die of suffocation in 10 hours, is found in medical and scientific as well as popular writings. In that excellent manual "A Practical Treatise on Heat," by Thomas Box, which is generally very accurate, it is stated that an adult requires as a minimum 215 cubic feet of air per hour, and that "for prisons, workhouses, etc., it should be not less than 350, and for hospitals 1000 feet per hour per head."

To sustain these exaggerated estimates he claims 28 cubic feet per hour for respiration (which would be required only by those engaged in active physical exertion) and then adds the fanciful estimate of 187 cubic feet to receive the vapor exhaled. Yet as the vapor exhaled from the lungs is carried by the expired air, it is entirely gratuitous to affirm that six times as much more air must be added to carry what is already carried. The average cutaneous exhalation (from an ounce to an ounce and a half per hour) would be received at the temperature of the body by from 30 to 50 cubic feet of air. But the air thus moistened by cutaneous exhalation is not thereby deprived of oxygen or made unfit for breathing. Nor is the air which has once been expired entirely unfit to be breathed again. The respiration consumes only about one fourth of the oxygen of the respired air, and in ordinary respiration we inhale a portion of our own expired air at

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dine, because there was not a solitary seat in it which was out of a thorough draught. This month of May is the most fickle and dangerous in the whole year.—*N. Y. Times*, *May*, 1881.

These extravagant notions have been encouraged by the medical profession and writers on hygiene. A medical journal lately demanded 3000 cubic feet per hour as necessary for each individual! The amount of air actually breathed by the lungs of an average adult is from ten to fifteen cubic feet per hour. If during the hour he should be supplied with one twentieth of the amount claimed, say 150 feet, he could have breathed or contaminated only one tenth of it. If by proximate ventilation his own expired air had been removed, and fifteen feet of good air returned, his ventilation would be perfect.

each inhalation and feel no inconvenience therefrom. To demand 215, 350 or 1000 feet of air per hour as necessary to breathe is an absurd and unscientific demand, arising entirely from the difficulty of securing any proper ventilation by the inefficient distal methods which have been in vogue. Instead of requiring 200, 300 or 1000 feet per hour, the most careful experiments of physiologists show that the lungs discharge in respiration from 250 to 350 cubic feet in *twenty-four hours.* The largest estimate, that of Valentin, was not quite 400 feet. From 10 to 15 cubic feet per hour is therefore the actual requirement for adult lungs, and even if less than this should be supplied, requiring the air to a small extent to be breathed more than once, the consequences would not be important.

With pure and cleanly surroundings the injury to health which we may receive from our own expired air is very trivial indeed, compared to what we may suffer from unchanged or uncleanly clothing and from the morbid exhalations of others. Close association with persons of impaired health and sleeping within the range of malarious exhalations are matters of far more serious detriment than the limited supply of good air.

The excessive introduction of external air demanded by a false theory would be harmless if it were brought in from a pure locality, and brought to the temperature of the apartment before introducing it by passing through a heater or playing against a stove and ascending with its hot current.

The ventiducts, which carry off the air and make a demand for more, should be placed so as to be as near as practicable to the persons in the apartment, and it would be better to distribute them through the apartment than to confine them to the walls or the corners.

When a stove is used, the opening of the ventiduct should not be close to the ceiling, for that would carry off the hot air from the stove as fast as generated. But with an open fireplace the ventiduct may be placed at the ceiling, for the breath at 98° and the moisture it contains would be found to accumulate at the ceil-

ing, as the temperature of the apartment generally would not be over 65°. If, however, there is a supply of hot air from a register or a stove, which of course goes to the ceiling, the ventiduct opening should be placed three or four feet below the ceiling and as far as convenient from the supply of hot air. A smaller opening should be made immediately at the floor to carry off any heavy gases or dust. Even in the cleanest apartments the stratum of air on the floor is more or less impure and at least dusty. Where spitting is practised it is filthy and malarious; besides, it is the coldest air, and should be removed on that account to make a comfortable place for the feet. I would therefore recommend as a general rule an opening two or three feet below the ceiling and another at the floor.

Ventiducts should not be large. The smaller and more numerous the better. Square-inch openings or slits scattered around the room are better than large apertures. A slit the eighth or sixteenth of an inch wide and ten or twenty feet long horizontally is a good arrangement near the ceiling or along the level of the floor, sucking up the dust and the cold air falling from the windows below and the foul air above.

Ventiducts running up 20 or 30 feet will discharge the air freely if it has a free admission, as from a furnace or any free opening, but if counteracted in a close apartment by the draught of a fire-place or stove their effect is nullified until a door or window is opened, or some aperture for ventilation.

If ventiducts are introduced into a stove-heated room there should be a very free admission of fresh air playing against the stove or stove pipe to enable the ventiduct to draw, for it cannot draw air from a perfectly close room. Or the fresh air may be drawn in through fine apertures near the ceiling. Where this is arranged I would recommend ventiducts as good ventilators for such rooms with their chief openings at three or four feet below the ceiling, with an opening at the floor level.

None of these ventiduct arrangements, however, are accurately and scientifically adapted to the purposes

of ventilation; nor have I ever seen or heard of a plan which effects its objects *perfectly;* though either of the plans mentioned will render an apartment satisfactory to most of its inmates, unless it contains more than a score of occupants.

The plans, however, are all faulty in this, that their ventilation is imperfect because the exhalations from the persons in the apartment are not promptly removed so as to keep the air pure. The breath and perspiration of persons and smoke of the lights should be promptly removed, but all systems of ventilation of which I have heard allow these exhalations to diffuse through the air, and propose only to remove the entire air of the apartment with such contamination as it may have had instead of *removing the contaminating gases.*

This system of ventilation is much like the ventilation of a savage hut, in which the smoke is not carried off by itself, as in the chimney of a city residence, but contaminates the whole air of the hut, with which it passes off at a hole in the roof. If we could see the breath, the aqueous vapor, and the lamp-smoke in one of these supposed to be well-ventilated rooms, we should see something much like the murky air of the savage wigwams. Every pupil in a school would be surrounded by a cloud of his own breath and exhalations, which he would be breathing all the time, and where the gas is burning the upper strata would be full of carbonic acid and aqueous vapors, not to mention the impurities of the gas. If a somewhat purer air is found within two feet of the floor it is contaminated with the dust and odors of the floor.

If each boy in the public school were sprinkled with the tincture of assafœtida, benzine, or bisulphide of carbon, the exhalations from them would be small in amount compared to the natural exhalations from his person, but, being more obvious to the senses, they would be utterly intolerable under the best system of ventilation that has ever been put in operation.

If the inventors of ventilating plans would go direct to their aim they might ventilate an apartment so well that its filthiest inmates could hardly annoy

and even a small-pox patient might be harm-
ıose a few feet removed; but such ventilation
as not been thought of for the school-room.
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ɔw offend the senses and endanger the health.
'entilation must go directly to its object; and
ıe of a chimney remóves the smoke before it
ɯminated the air of the apartment—as a sewer-
oves foul liquids before they contaminate the
system of ventilation, instead of exhausting
e air of an apartment to take out a trifle of
acid gas, instead of waiting until the car-
id is diffused through the whole mass and
ı by all the inmates, instead of keeping them
air contaminated by breath and perspiration,
ɔh is not purified, but only diluted by pouring in
esh air, and never entirely pure—would draw off directly the *impure* air with as little as possible of the pure before the impurities have diffused themselves throughout the whole from ceiling to floor, as they do rapidly by the law of diffusion of gases.

If we carry off this, the impure air, as a chimney carries off smoke, not allowing it time for diffusion, we attain the *beau ideal* of ventilation. I do not propose exactly to carry out the figure by attaching a funnel or flue to the nose of each breathing biped, making each one discharge into his own separate chimney. I propose simply to connect the ventiduct or the flue of the fireplace or stove with the locality where the impure air is generated, instead of drawing upon the whole apartment equally, to draw from the contaminated portions.

If we establish minute ventiduct openings at the desk of each pupil in a school-room in the midst of the gases he is discharging, these gases will be taken up into the ventiduct and removed before mingling with the atmosphere generally.*

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* A very cheap and simple method of ventilation was suggested by a writer in the *New England Journal of Education:* "I know

If the principle were perfectly carried out by attaching a pipe to the breathing organs of each individual the amount of air to be removed for perfect ventilation would be about 10 or 12 cubic feet per hour per capita; but if we allow these 10 or 12 cubic feet of respired air to mingle thoroughly with the adjacent atmosphere it will be necessary to remove from twenty to thirty times as much to establish good ventilation, and even then the ventilation would be imperfect. The contaminated atmosphere would be removed in the first stages of contamination, but the individual would all the time be breathing that vitiated atmosphere instead of a pure one. The respiration of pure air in a crowded apartment—air almost as fresh as the mountain breeze—can be enjoyed only when all contamination is promptly removed before diffusion. This cannot be done by the system of general ventilation heretofore in vogue, for such ventilation, operating at the sides of the apartment, carries off not the foul air, but an average specimen of the air of the whole apartment—from twenty to fifty feet of air for every foot of contaminated air.

If the structure of the apartment allows 250 cubic feet to each inmate (as when an apartment 20 feet square and 10 feet high has 16 inmates), the necessary ventilation, according to common estimates, would be

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of no better mode of ventilating old buildings than the simple, inexpensive one of fitting a board tightly across the bottom of the window, some eight or ten inches wide and two or three inches from the sash, on the inside. The lower sash is then raised without causing a draught of air upon the scholars while the pure air is entering at the bottom and middle of the window. I have seen this tried successfully with every window of a school-room—eight in all—thus raised, to a greater or less extent, through every session, and during the entire winter season, without a single scholar taking cold therefrom. The room was 28 by 32 by 15, and the best ventilated I ever entered while a school was in session."

In this case the breadth of the opening prevented crack-blowings, and the number of openings was such as to give a free and gentle access of air which could not affect any one unless sitting too near the window, or unless a current should be produced by wind, in which case it would be necessary to close the openings on the windward side.

to change the whole atmosphere every hour, discharging through the ventiducts 66⅔ cubic feet per minute. During the hour thus occupied in changing the air each inmate discharges about 10 cubic feet of respired air from his lungs, and infects fully half as much with the exhalations from his person. The diffusion of these 15 feet through the 250 constitutes, if equally diffused, an impurity equal to six per cent of the whole air in every part of it. But the diffusion cannot be so rapid. The impurities diffuse slowly in a room at 70° to 75°. The breath and exhalations do not rise like a separate vapor, but mingle with the surrounding air, and soon attaining an equilibrium of temperature cease to rise at all and accumulate around and above the head of the pupil, just as we see tobacco smoke, which is warmer than the common breath, standing in thick clouds around the smoker.

The distal method of ventilation is therefore incompetent to furnish a healthy atmosphere without so lavish a supply of air as would either be wasteful of heat or produce colds and pulmonary irritations by the unequal temperature and currents of air. An institute in Brooklyn has been severely criticised for its imperfect ventilation, and it was stated that the impurity of its air was greater than that of a crowded theatre and "three times as great as in the public schools of Boston and Philadelphia," and yet the room in question had 272 cubic feet of air-space for each occupant and a supply of nearly five feet of air per minute for each person. Suppose the supply had been only four feet per minute or 240 cubic feet per hour for each person, such a supply was from 20 to 25 times the amount of air actually breathed, and yet with ample space and this ample supply of air the ventilation was deficient and the air impure because it was not purified by proximate, but by distal ventilation. If the fire that warms a public hall were built in an open crucible and no chimney allowed, it is obvious that no possible amount of distal ventilation could prevent an intolerable smoking. Just so with the gases of vital combustion developed all over the

hall by human beings and not removed by proximate ventilation at their origin, but slowly diminished as the entire atmosphere is changed—more slowly than they are produced.

The most instructive view is to consider the appearances around a group who are vigorously smoking tobacco; just like that would be the appearance of school-rooms if we could see the breath of the pupils. When they have the maximum ventilation which hygienists demand they have still an imperfect ventilation, for the supposed room contains at all times nearly one hour's accumulation of exhalations just around and above the heads of its inmates, sufficient to make quite a cloud if we could see it, equal to six per cent of the whole air, but just around the pupil equal to 20 or 30 per cent.

Such ventilation is not only imperfect in a hygienic sense, but wasteful as to heat, requiring in the supposed room the heating of 4000 cubic feet of air every hour, costing 2800 or 3000 units of heat; and still more objectionable, as the entrance of 4000 cubic feet of air hourly, unless it be warmed as it enters, makes the whole apartment unwholesome and dangerous to delicate lungs, which are kept in a continual state of irritation bordering on a cold. This latter evil is not commonly understood, but it is a greater evil than all the effects of impure air from limited ventilation. It is the foundation of our prevalent diseases of consumption and pneumonia.

It is well known that men seldom take cold when sleeping in the cold air at any season, or in an open cabin, the doors of which are never closed. Colds belong almost entirely to close apartments, which are elevated to a high temperature, and which receive their supply of fresh air drawn in by the draft of the chimney, through numerous cracks and apertures. These strata of cold air in a warm apartment are dangerous to health and life. We realize the effect (when aggravated) by sneezing and feeling that we are catching cold, but much oftener experience a malign influence in an uncomfortable, irritated condition of the

lungs, which is not sufficiently marked to attract our notice until it accumulates into a cold.

Pulmonary irritation is therefore one of the most common effects of our unscientific modes of warming and ventilation, which at their best *do not give us pure air*, while *they do endanger our health.*

The only rational mode of ventilation is to place a ventiduct immediately at every source of impurity, and carry off all the impure air with as little as possible of the pure.

This is PROXIMATE VENTILATION, by which I would supersede the DISTAL VENTILATION which carries off about twenty feet of pure air for one of impure, and often a still larger quantity.

If a small ventiduct is placed at the desk of every pupil, as near as practicable and a little above his head, it will draw off only the air in his immediate vicinity which has been contaminated. If it were applied to his nostrils it would remove the respired air by an absorption of about 10 cubic feet per hour. If 15 cubic feet per hour were removed by a ventiduct at the pupil's desk the ventilation would be more satisfactory and effective than if 300 feet per hour were removed on the usual plan by a few ventiducts along the walls where the percentage of contamination is the least.

If the small ventiduct at the desk were worked up to the fashionable hygienic standard of 250 cubic feet per hour it would produce an absolutely pure atmosphere, by removing rapidly all the contaminated air and bringing in its place a continual and gentle influx of pure air to the desk. But there would be no occasion for more than one fourth of this amount of aeration; 60 cubic feet per hour would be an *ample* amount of change. We thus save three fourths of the heat necessary to warm the air, and all of the pulmonary irritation caused by the cold draughts coming into the room through cracks and keyholes, besides attaining a purity not before known.

These advantages result from placing the ventiduct not on the walls, but near the breathing inmate, the

PROXIMATE
VENTILATION

advantages of which are mathematically evident. The light from a taper diminishes in the ratio of the square of the distance. The taper on the desk one foot from the book gives a hundred times as much light as if placed 10 feet off on the wall. But the absorbent effect of a ventiduct aperture at 10 feet distance in the open air is little more than $\frac{1}{1000}$ of that which it would exert at a distance of one foot. This rule does not apply in an apartment, but there is obviously a vast disparity between the effects of a ventiduct opening at a close and at a remote position, and we can easily perceive the inefficiency of *distal* ventilation, which is much more efficient in bringing in draughts of cold air than in purifying the atmosphere of the room.

Mathematical reasoning, therefore, makes it imperative that the ventiduct should be close to the pupil at his desk, and when we adopt this plan there is no difficulty in keeping a pure atmosphere, no matter how many persons may be seated in the apartment, or how many cigars they may be smoking.

The futility of the common modes of ventilation is readily shown by filling a room with tobacco-smokers, or any other sources of unpleasant odors which would be offensive in spite of the ventilation.

The great importance of this principle of proximate instead of remote ventilation is conspicuous in its application to the sick-room and hospital. A ventiduct immediately above the head of the patient not only secures pure air for him, but prevents him from contaminating the air around him, and renders the hospital safe from atmospheric infection, and almost as healthy as an open tent, no matter how crowded.

These considerations are important in the school-room, where we are continually liable to infectious influences from pupils who have not been removed from school as promptly as they should be, or who come from sick chambers, bringing infection with them.

The numerous nuisances arising from offensive secretions in the breath and perspiration and from personal uncleanliness are thoroughly removed by prox-

imate ventilation, and the teacher of the most crowded school may thus be sustained by pure air in his arduous labors.

Proximate ventilation contrasts with *distal* ventilation as the natural purification of the body by the secretion of the kidneys, skin, and bowels compares with the obsolete practice of bleeding, which carries off much good blood and very little morbid material.

The method of arranging for *proximate* ventilation is very simple. Pipes should be laid along the floor under the row of seats or desks to be occupied. If laid under the floor parallel to the joints they will be entirely out of the way. But they may be laid above the floor if they do not cross any aisle. These pipes, which we may call the foot pipes, should run to one at right angles along the base of the wall, from which the ventiduct may ascend to the height of the roof. The pipes being thus located under each desk, the little proximate ventiducts or absorbent pipes, in which lies the whole merit of rational ventilation, should rise from them at each desk about a foot higher than the head of the pupil as he sits. For its mouth or absorbent of gases there should be a delicate narrow slit 12 or 18 inches long, or a number of small holes on the side next the pupil, with a small slide fitting closely over it, so that all desks not occupied may be thrown out of the system of ventilation and its force concentrated on the desks that are occupied. Each pupil should be required to open his valve when he takes his seat, and it may be closed after his departure if the weather is cold to economize heat.

The size of the slit or mouth of the proximate ventiduct that should be kept open depends on the sectional area and speed of the current in the discharging ventiduct, which may be calculated, but the whole matter will have to be regulated by experience.

A ventiduct about 32 feet high and one foot square, discharging into an external atmosphere 40 degrees lower than the temperature of the room, would have by the mere force of specific gravity a current of not less than three feet per second, and would discharge there-

fore (180×60)=10,800 cubic feet per hour, which is about 25 times as much as the room supposed would require for proximate ventilation, and more than twice as much as it would require for the ordinary wasteful ventilation, the room being 20 feet square with 16 inmates. A pipe four to six inches square would therefore meet the requirements of the vertical discharging ventiduct. A valve in the pipe might serve by turning to moderate or arrest the current.

The ventiduct should be as long as practicable to give it draught. If shortened it would be less efficient, and its diameter should be increased or the draught increased by a lamp or gas-light. Whatever the area of the discharging ventiduct the mouths or slits for absorption should have in the aggregate an equal area.

If the aggregate sectional area of the mouths should exceed that of the ventiduct it would make them liable to inequality of action, leaving some desks poorly ventilated. If their area should be less, it would be favorable to their uniformity of action; but in proportion as their area is diminished the *draught* of the discharging ventiduct should be increased. If for any reason the ventiduct cannot be long enough for good draught its sectional area may be increased in proportion as it is shortened, and the size of the absorbent mouths increased to the same extent.

But a feeble draught is objectionable, leading to feebleness and uncertainty in the currents, and if the ventiduct is short it should have an artificial draught produced by heat. A large gas-burner or lamp in the ventiduct would accelerate its current materially, but the most efficient method would be to pass the stove pipe up along its axis. Another method is to pass the ventiduct up the chimney-flue, the heat of which, when there is a good fire in it, is generally sufficient to make the ventiduct effective. A very efficient method is to dispense with the ventiduct and connect the base pipe directly with the stove. The draught of a stove or chimney is abundantly strong, and the amount of air required by the fire that warms an apartment in winter is more than sufficient for its ven-

tilation, as every bushel of coal requires a supply of from twenty to thirty thousand cubic feet of air. Hence, if a stove be closed so as to draw all the air for combustion from the base pipe mentioned it could secure a good ventilation.

Any apartment, therefore, which has a fire in an open grate or open stove must necessarily have ample ventilation as regards mere *change of air*, as a chimney even 20 feet high has a current of from 25 to 50 feet per second. In a flue six inches square this would produce a discharge of not less than 6¼ cubic feet per second, 375 per minute, 22,500 per hour; or five times the amount required for distal ventilation. Hence, chimney ventilation is ample as to quantity.

If, however, the fireplace be so constructed, being very wide at the top, as to let in a great deal of cold air to the flue, the temperature of the flue being lowered its draught is impaired materially, and the same result follows if the fire be too small to fill the flue with smoke; but if a fireplace be close, as when a blower is placed on it, even a small fire makes a powerful draught, and the same is true of a stove.

With the stove or fireplace, therefore, ventilation is a matter of course, unless obstructed by soot or ashes. The ventilation is ample in quantity, but, like all systems of wholesale *distal* ventilation (ventilation at a distance), it is still imperfect in realizing the true aims of ventilation in purifying the air at each desk, while it generally involves an amount of cold currents dangerous to health and life, as do all systems which do not warm the air as it comes in.

The practical conclusion is that ventilators or ventiducts are of little value in rooms ventilated by the chimney and a lively fire, for they only add a little more of the same sort of irrelevant unscientific ventilation.

But when we introduce scientific *proximate* ventilation either the fireplace, the stove, or the ventiduct becomes amply sufficient to carry off all impurities, and if our absorbent apparatus is properly connected with the draught of the chimney, which is very strong,

we might have every desk occupied by a cigar smoker, and there would be less odor of tobacco in the room than would be perceived from a single cigar in rooms depending on the usual unscientific methods of ventilation.

Indeed if it were necessary to give such a test the experiment might be made, under proper conditions, *with a vigorous draught established*, of filling every desk with a smoker without giving any offensive odor that could be recognized at the teacher's chair.

Ventilation so thorough, sweet, and luxurious as this should of course be accompanied by protection from cold draughts by warming the entering air. The method of warming it by passing through a case around the stove pipe is one of the best and most economical. It might simply play against the stove, or it might pass through flattened pipes in the chimney, discharging at the ceiling, or it might be introduced through a case or sleeve inclosing the whole length of the stove pipe.

If we have neither fireplace nor stove, but heat by steam-pipe, the ventiducts must be used and the cold air must play against the hot pipes as it enters. Ventiducts should always be constructed with an opening by which to introduce a lamp or gas-light to increase the draught. With this addition a small ventiduct will be efficient.

When the fires are put out in the spring the problem of ventilation assumes a different shape. The warm air of the breath and personal exhalations is continually rising, though slowly, and needs to be carried off as rapidly as practicable from the ceiling. Hence, we think at once of ventiducts opening at the ceiling, which may carry off the warm foul air while the fresh cool air enters below. Such an arrangement may be sufficient for private dwellings and apartments that are not crowded, but when there are many occupants of an apartment proximate ventilation is the only method that is efficient.

When the thermometer is above ninety the gases from the person scarcely rise at all, but collect around

one's head, and in a sultry atmosphere charged with our own exhalations we are more oppressed than in winter by poor ventilation, unless relieved by the breeze through open windows or by proximate ventilation.

Proximate ventilation is therefore highly important in a hot summer, and lamps in the ventiducts will be necessary to increase their draught, which may also be aided by locating them outside of the walls in the sunshine on the south side of the house. Ventiducts should, of course, always be metallic, to avoid the dangers of fire.

The system of proximate ventilation may be introduced in hospitals by placing an absorbent pipe at the head of each patient's bed, and in churches by placing them around the walls, just above the heads of the congregation. It would be well also to erect one at the ends of each pew. In theatres they might be placed around the walls and at the back of each seat as a part of the chair. In school-houses we might substitute for the vertical pipe at each seat running to a base pipe on the floor a horizontal pipe above each row of seats, with its opening over the head of each pupil, which would be a cheap and simple method, and would also furnish a convenience for hanging up coats, hats, and books. The cheapest possible method would be to run the pipes clear across the room from wall to wall, terminating in the base pipe of the ventiduct at the height of six or six and a half feet. The novelty might be laughed at until it became familiar, and the vertical pipes would probably be preferred for the sake of appearances.

Apartments only eight feet high might be thoroughly ventilated by absorbent pipes running along the ceiling over the heads of each row of pupils.

Other Means.—The utmost efficiency of ventilation may fail to be satisfactory when the floors or walls of an apartment are full of impurities or the emanations of sewers, dead rats, or foul cellars. In such cases disinfection becomes necessary. The apartment should be closed at night and filled with the fumes of

burning sulphur, sulphurous acid gas being one of the most powerful disinfectants.

One part of chloride of zinc or three parts of sulphate of iron dissolved in three hundred parts of water will efficiently disinfect water-closets and other impure places. A solution of thymol in water which dissolves about one-thousandth of its weight may be freely used in sprinkling or washing the apartment, as it is entirely safe and inoffensive and occupies the highest rank among purifying disinfectants. The solution may be made stronger by using alcohol or acetic acid to assist in the solution of the thymol.

Climatic Difficulties.—In supplying a wholesome air to school-rooms it may be necessary to overcome climatic difficulties as well as personal exhalations. The cold of winter is overcome by stoves and furnaces, but civilized nations are stolidly slow to realize that the oppressive heat of summer may be overcome as well as the cold of winter. Yet what is the difficulty? Coldness may be obtained by ice-making machines as easily as heat by fuel, and a small quantity of ice will be sufficient to render any apartment comfortably cool in a torrid climate to the great benefit of all concerned. A summer temperature of 75° or 80° is altogether pleasant and wholesome, and the problem is to absorb any excess of heat above that amount. On a few summer days there will be an excess of 15°, but seldom more than 10°. The excess of 15° in an apartment 20 feet square and 12 feet high, involving, if it were empty, 4800 cubic feet of air (but several hundred feet less when occupied), would be equivalent to less than fifteen hundred units of caloric, as the capacity of air for heat is less than a fourth of that of water. If the excess should ever amount to 1800 units it would be absorbed in melting thirteen pounds of ice, as a pound of ice absorbs 140 units in melting.

The chief consumption of ice, however, would not be in cooling the air, but in cooling the apartment, its walls, floor, and furniture, which, being solid material, retain vastly more caloric than the atmosphere. To cool the atmosphere, walls, and furniture sufficiently

to make the apartment cool next day might require 40 or 50 pounds at first, but afterwards much less, as the room being continually cool would not need much cooling at night. The ice required for cooling should be placed in a metallic vessel near the ceiling, which would enable it to cool all the air and also to cool the walls by radiation as well as through the air. The apartment should, of course, be tightly closed while cooling, especially at the bottoms of doors, through which cold air might escape. It would not be desirable to cool it below 65° or 70°, and ice should be used through the day sufficiently to maintain a proper temperature. This thawing process would not have an injurious effect, because the air in summer has an excess of the positive condition and contains a great deal of moisture, which evolves positive elements in condensation. This ice cooling would be especially agreeable in the hot and sultry weather which is most oppressive, as it would both dry and cool the air.

Protection against heat should not depend entirely on ice. The school, if in a cottage edifice, should be shaded by trees or the roof should be covered by the foliage of vines. If there is not time for perennial vines, the morning glories and hop vines make a speedy shelter until the honeysuckle, ivy, grape, and flowering creepers give their shade.

The walls should be massive. Thick-walled buildings are a great protection against heat. The thin modern shells we sometimes see are like bake-ovens in the sun. A wooden building should have at least eight inches of saw-dust between the external shell and internal plastering, and a similar arrangement at the roof—a board-ceiling being first fastened on, the saw-dust laid on that, and the shingling or tiles above it. The objections to wood-work may be removed by fire-proofing this timber and covering it with metallic paints. Such a house would not be penetrated by the sun's heat.

Thus by means of shade, substantial edifices, and ice we may defy the summer's heat, and by means of

wholesome vegetation around, with ozone and thymol within the house we may also defy malaria, obtaining that health and comfort at small expense for which our citizens expend millions in rushing to the sea-shore and the mountains.

Finally.—In the pure air of perfectly-ventilated, sunny, and flower-surrounded halls children will find healthier influences than in their own homes, and they will partake of the contagion of health and animal spirits, for health is as contagious as disease.

The teachers should be persons of good health—their good moral health is indispensable. All will attain higher health in a school of true education in which the emotions roused by song and by social harmony exert a powerful hygienic influence.

ADDENDA.

Gross neglect of ventilation appears to be so common and ignorance on this subject so prevalent that it may help to overcome the public apathy to refer to the extent of these evils.

Complaints of improper ventilation, very impure air, draughts, cold, and variable temperatures are published in reference to many colleges—Amherst, Williams, Yale, Harvard, Cornell, Syracuse, Columbia, Dartmouth, Racine, Tuft's, Wesleyan, and Boston Universities and others, and recent investigations show that Oxford University (England) is very defective in this respect. Some years ago there was an epidemic of cerebro-spinal meningitis in one of the schools of Paris, owing to defective drainage.

How dull must be the moral sensibility which would tolerate for a single day the gross condition of certain New York schools. The following example is perhaps the worst. The report is from the N.Y. *Sun:*

"On the lower or ground story of Public School No. 53, on 79th Street, near Third Avenue, are two rooms, occupied by the smallest

children in the primary department, little tots supposed to be between the ages of 5 and 7 years, but many of them little if any more than 4. Over the black-board in each room is a placard bearing the averment, put there by official orders, 'This room accommodates 73.' Even were the apartments in other respects suitable for the uses to which they are put, that would be an overestimate of their capacity. Foul gases rise from the closets, rush into those two rooms, and roll up the back-stairs toward the other branches of the primary department above, in such volume as to sicken strangers who undertake to explore the place. In cold, clear weather, and especially upon Monday mornings, when the rooms have had two days' ventilation and purification, the offence is least, but in damp, foggy, and warm weather it is actually poisonous.

"Miss W. M. Bonesteel, principal of the primary department, said: 'No teacher has ever served in either of those rooms without feeling their bad effects, and some have been made seriously ill there. I endeavor to change them around as much as possible, so as not to leave any one there longer than can be avoided, but a teacher who is at all delicate suffers from exposure to that atmosphere for a single day. Miss Marion Ellsworth, the last teacher who was made sick down there, was laid up during the holidays, and upon return to duty brought me a certificate from her physician, Dr. J. Ralsey White, of 221 East 124th Street, in which he wrote: "I have no hesitancy in saying that no teacher can remain in the room formerly occupied by bearer (Miss Ellsworth) without becoming an invalid, as there is no proper ventilation and no way of getting it. The sickness of Miss Ellsworth is entirely due to being confined to this room, and whoever occupies it will be sick." If you will talk with the teachers who have served in those rooms you will be assured that the doctor's emphatic averment is not at all too strong. I myself cannot spend half an hour there without having a headache. Whenever I am down in those rooms for purposes of examination or any other duty I suffer from sensations of nausea, oppression in breathing, and drowsiness.'

"Miss Amy Mirick said: 'I was in one of those lowest primary rooms last spring, and was sick when I went home at the beginning of the summer vacation on June 24. I had typhoid pneumonia, and my physician, Dr. Cheeseman, of 5 East 27th Street, said it was caused by the air in our class-room. When I returned to school on September 23 I had even then hardly recovered my health. Fortunately for me I was transferred then to an up-stairs room. Had I been required to resume my former place I think it would have prostrated me again.'

"Miss Carrington, who is now teaching in one of the poisonous rooms, said: 'I have been here three months, and have had headaches and a constant succession of colds and sore throats all the time. I am not very delicate, but I feel that this air is telling upon me very painfully. How the children endure it I cannot imagine.

They have sore throats and colds a great deal, and in the afternoons, when the air is always worst, and in close, warm days, they are very drowsy, not so much because the poor little tots are weary with the long hours, as that they are made languid and stupefied by the foul, oppressive atmosphere they have to breathe.'

"Miss Sarah Peterson said: 'I was down stairs in the fall term, but happily escaped from there before I became seriously ill. The children were always suffering with headaches, and in the afternoons some of the little creatures were crying with the sickness, weariness, and pain induced by the abominable air they had to breathe. The smell in those rooms was enough to sicken a person unaccustomed to it, and, what made it worse, the glaring sun came in upon the children's faces, so that we had to close the blinds, and that shut out the little draught of air we might otherwise have had. You can have no idea of the heat, stench, and oppression in those abominable rooms in warm and wet days. Some of the children were only able to come to school during the forenoons. They were delicate, and could not endure the afternoons when the conditions were worst.'

"Miss Purroy, principal of the grammar department, said: 'Those rooms should not be used for class-rooms at all. Their vicinity to the closets, the lowness of their ceilings, and the impossibility of ventilating them render them intolerable and dangerous to the lives of all compelled to remain in them for any length of time. The attention of the Board of Health has been called to them. An inspector came up, sniffed at them, said they were very bad, and went away; and that is the last we have heard from that direction. The matter was brought to the knowledge of the Board of Education. A Commissioner came up, took a whiff of our accustomed lower primary atmosphere, looked disgusted, and went away, saying it was too bad; and that was the last we heard from him. During the vacation there was a large sum expended on the building—some $17,000, I understand—in fire-escapes and other very good things; but those rooms remain as abominable as ever. It is an inhuman thing to keep little children in such places. It is bad enough to subject the poor teachers to a course of poisoning; but how infinitely worse to confine helpless, delicate children, mere infants, in such places.'"

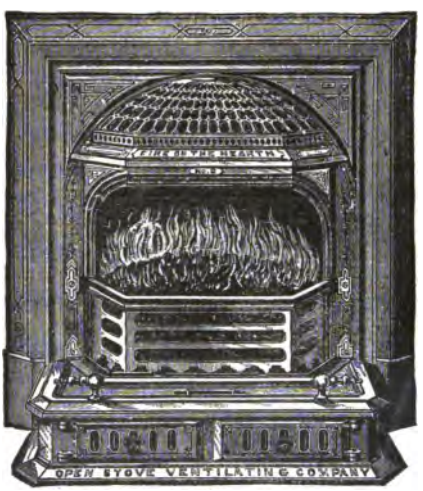
THE VENTILATING GRATE AND STOVE.

Since the greater part of this volume had been put in type I have had the great pleasure of seeing that my suggestions as to free ventilation by grates and stoves have been happily embodied in the ventilating grates and stoves of Dr. A. R. Morgan, which have been tested by experience and given universal satisfaction.

In the engravings herewith presented the reader will see by the section through the middle of the fireplace that the cold air entering by the back of the grate or stove and passing over its top is thoroughly heated before it enters the apartment in the current indicated by the arrows. As the burning of a bushel of coal attracts and sends up the chimney about 25,000 cubic feet of air, and this amount may be doubled by enlarging the flue or increasing its draught, and as this amount of air must enter the apartment, it follows that even a moderate fire would enable us to in-

troduce from one to three thousand cubic feet of air every hour. If this supply of air is heated as it enters it will at once occupy the upper part of the apartment in an equable manner and gradually descend to supply the space afforded by the air withdrawn by the chimney. In an apartment sixteen feet square a supply of two thousand feet hourly would change nearly the entire atmosphere of the apartment (if ten feet high), and give to each occupant, if allowed an area of five feet square, two hundred cubic feet of fresh air per hour. If the apartment be more crowded it will be necessary only to increase the draught of the stove or

grate and meet all the indispensable requirements of ventilation. That we may have all the air required was shown in the use of a No. 16 stove (an intermediate size) by Prof. Youmans, who found that it introduced into the apartment 5600 *cubic feet of air per hour*, at the temperature of 160°, and when better arranged for ventilation 10,322 *feet per hour*. In all the reported observations the temperature of the apartments thus



heated was remarkably uniform, not varying more than 5° in different places.

This great improvement, which has been universally commended and which has received medals at the United States Centennial Exposition in 1876 and the Paris Exposition in 1878, is still ignored in New York and some other large cities, owing to the ignorance or corruption of the authorities.*

When I say that this method of ventilation meets all indispensable demands, I do not mean that it is at all

* A member of the New York Board of Education pronounced "this talk about ventilation all—poppycock."

equal to *proximate* ventilation, or that it could cope with the exhalations of tobacco smoke and disease so as to make them harmless. We need proximate ventilation in every apartment in which men smoke tobacco, or in which the exhalations of the sick contaminate the atmosphere. An absorbent aperture is necessary over the head of every invalid couch and over the head of every smoker. Theatres, churches, restaurants, shops, and offices should have these ventilating pipes and apertures around the walls and on each column at a height of about five feet to absorb rapidly all human emanations and carry them to a ventilating shaft or a stove, and similar openings should be located above every lamp and gas-light.

THE AMERICAN UNIVERSITY.

During the year 1882 the author of this volume received sufficient evidence of the sympathy of liberal minds with his educational doctrines to justify the attempt to organize a complete educational institution to give them a living embodiment.

The difficulties of so great an enterprise in itself, the difficulty of rousing the public to a just appreciation of its importance, and the short remaining duration of a life which has already overpassed the usual term, will probably render it almost impossible to present the *beau ideal* of education by fully realizing the plans which teachers trained in the new system may carry to perfection.

Nevertheless, fully convinced that these principles must in time command the assent of the entire world, and that the intuitions of humanity, which have ever accepted the law of Divine Love as presented by Jesus, will also accept a clearly defined philosophy of that law, and a practical method of making it a rule of human life, the movement therefor has been initiated by the incorporation at Boston of the AMERICAN UNIVERSITY, the charter of which, granted and issued by the Commonwealth of Massachusetts on the 22d of December, 1882, specifies as its purpose: "The establishment of an improved system of education for the development of the moral, intellectual, industrial, and vital capacities and character of persons of all ages; the cultivation of science, art, literature, and ethics by investigation and propagation of knowledge; and the preparation of pupils for all honorable vocations by education in the arts, sciences, skill and virtues to which the University is devoted, in accordance

with the principles published by Dr. Joseph Rodes Buchanan and others, for the application and diffusion of which this University is established and designed to operate by Departments or Colleges; viz., the College of Therapeutics, the College of General Culture, the College of Industry, and such other Departments as its authorities may from time to time establish, each Department being designed not only for culture and instruction, but for the diffusion of its principles and methods in the community by all suitable measures."

This charter was granted to a body of fifteen corporators, physicians, clergymen, and business men of the highest respectability, by whom a Board of Regents has been chosen for the management of the corporation, and DR. JOSEPH RODES BUCHANAN elected President. The COLLEGE OF THERAPEUTICS will be the first established, its professorships being filled by gentlemen of the most liberal sentiments; and the other departments will be organized as soon as the competent teachers and necessary endowments are obtained.

The College of Therapeutics is designed to give as thorough instruction as the best medical colleges have ever given in Chemistry, Physics, Anatomy, Physiology, Institutes of Medicine, Pathology, Therapeutics, Diagnosis, Clinical Practice, Surgery, Obstetrics, Pharmacy, Botany, Materia Medica, and non-medical therapeutic agencies. It will be distinguished from other medical schools by teaching a more perfect diagnosis, a far more extensive knowledge of the Materia Medica, and a knowledge of many curative methods unknown or neglected in colleges heretofore, which are in many cases far preferable to drug practice.

It will be distinguished also by giving its pupils a thorough knowledge of the *entire constitution of man*, embracing a scientific understanding of the brain and the soul, and the interaction of psycho-physiological life, as demonstrated by SARCOGNOMY, whereby medical philosophy becomes possible and the contributions of medical parties may all be received and harmoniously adjusted.

As the imperfect instruction of Medical Colleges has created a demand for post-graduate courses of instruction it is believed that those whose enlightened minds recognize the need of such instruction will find in this College the additional knowledge appropriate to a post-graduate course which would satisfy a liberal and conscientious physician.

The College will also adopt various hygienic and ethical measures to preserve the health of students, which generally becomes impaired, and to cultivate the elevated sentiments and refined manners which belong to a benevolent profession and are the moral basis of its efficiency and success.

BUCHANAN'S SYSTEM OF ANTHROPOLOGY.

For more than twenty years this work has been out of the market, the first edition having been rapidly sold. Many have been looking anxiously for a new edition, which, however, numerous engagements have caused the author to postpone, undecided indeed whether to re-issue the manual first published with necessary improvements or to issue a full edition.

The material on hand at present, but not ready for the press, would require at least 13 volumes, on—1, Cerebral Physiology; 2, Cerebral Psychology; 3, Pneumatology; 4, Sarcognomy; 5, Psychometry; 6, Pathognomy; 7, Insanity; 8, Pathology; 9, Physiognomy; 10, Animal Magnetism; 11, Sociology; 12, Education, and, 13, Criticism, or Review of Philosophy.

My life may not be sufficiently prolonged to complete this programme as I wish, but if not there will be at least a synoptic view of the whole subject issued in one volume, but with present engagements I dare not say when. The first imperfect edition elicited the following notices:

"We have no hesitation in asserting the *great superiority* of the form in which it is presented by Dr. Buchanan, whether we regard its practical accuracy or its philosophical excellence."—*American Magazine of Homœopathy.*

"Indicative of great ability and industry, no less than of sincerity on the part of the author."—*North American Review.*

"Beyond all doubt it is a most extraordinary work, exhibiting the working of a mind of no common stamp. Close students and hard thinkers will find it a rich treat, a deep and rich mine of thought."—*Gospel Herald, Cincinnati.*

"A new teacher, a profound thinker is addressing the age, and is destined to make a profound impression, if not upon all his contemporaries, at least upon the foremost thinkers of the time."—*Scalpel.*

ON THE MANAGEMENT OF CHILDREN.

BY MRS. ELIZABETH THOMPSON.

In reading the wise suggestions of Prof. Buchanan concerning the omnipotence of the moral nature and the necessity of diffusing the spirit of kindness through all educational processes, I was led into reminiscences and reflections which made me desire to add a little postscript to this interesting volume, to which Prof. B. has kindly consented.

Many years ago I went to a juvenile asylum at Boston, where I saw a girl about nine years of age, whose wan countenance struck me as possessing something rather peculiar or spiritual. The poor child, however, seemed ill at ease in the asylum. There was no cheerfulness in her face, no brightness in her eyes. She was not a favorite, and they complained of her dullness and inability to learn. Still I was attracted to her, and thought I would take her home with me.

Arrived at home I tried to overcome her fears, and assured her that I would be her friend; but still she gave the same timid glance and had the same spiritless manner. But continued kindness slowly inspired her with confidence; there was a marked change in three weeks. Her physical constitution improved under the better diet, and her face acquired the cheerful expression seen in children who have enjoyed a mother's love. She improved in every way under the regimen of kindness, and in three months she became one of the healthiest, brightest and smartest children I have known—a perfect contrast to the pale wretched weakling I found at the asylum.

Ah! how many children are there in asylums, schools and stranger families, where they live, or

rather vegetate, without the sunshine of love, who grow up with their moral natures starved and stinted, until they can neither enjoy life themselves nor yield any pleasure to others! How necessary is it that nurses, superintendents and teachers should possess a rich endowment of that love which is the harmonizing and developing power of childhood! How necessary, too, that in all our dealings with children we should act in the spirit of kindness and endeavor to make child-life a period of happiness! for it is only by such means that a normal development of body and mind can be attained. A childhood deprived of love, unprovided with proper food, burdened with task-work in text-books and borne down with reproaches is happily relieved by death.

I recollect how much I was pleased in visiting a juvenile institution in a more Southern city, where the little boys were indulged in freedom and natural development in the industrial way so strongly advocated by Prof. Buchanan. There were no pallid faces nor timidly averted eyes. The little fellows took a lively interest in their little tools and workshops, and those who had charge of the poultry manifested as much interest as any bird-fancier, and talked with animation and a correct knowledge about the different breeds of fowls and their peculiar qualities for laying eggs and raising chickens or furnishing a good fowl for the table. They were studying nature and learning these things in a natural and interesting way, just as children might learn everything if we would kindly provide them with the objects and the means of acquiring natural history from natural objects instead of tedious and dull printed pages.

There is nothing more uniformly pleasing than the acquisition of knowledge. This is the charm of travel and of conversation. Children never weary of learning in the natural way—the way in which the scientist develops science or gathers fresh knowledge—but it must be fresh. The dried and lifeless remains of knowledge which are packed into text-books are very indigestible to the young.

The Kindergarten rightly conducted is a happy illustration of these principles. The first object is to make the children happy and develop their amiable qualities. A loving teacher is indispensable. In the true Kindergarten children grow in body and soul: it is a true education. Their limbs are not cramped by confinement, and their eyes are not wearied by being fixed too long on any object. There is no weariness at all; only healthy development of every faculty. The younger the children, the more is the time devoted to physiological and moral development, health, happiness and good manners. These are the most necessary, as Prof. Buchanan truly asserts. Then, as the infant brain matures, we have constructive art and perceptive exercises, but the moral and physiological still predominate. Industrial art as an amusement or pleasure naturally comes next, and last of all the more laborious process of acquiring knowledge. Thus we should gradually change from the first occupations for children in the Kindergarten to the training for developed minds and constitutions, in which the physiological, moral, industrial and intellectual are combined harmoniously. But we should never lose the great basis of education, the physiological and moral. When we neglect those elements, education becomes a curse rather than a blessing. There should be an unbroken continuity from the Kindergarten to the highest professional school, the only change being the gradual increase of energetic work for body and mind as they acquire a stronger fibre.

I hope this volume may be the means of rousing our countrymen to the great errors now existing, and bringing into collegiate education the all-enriching and ennobling power of love and duty.

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